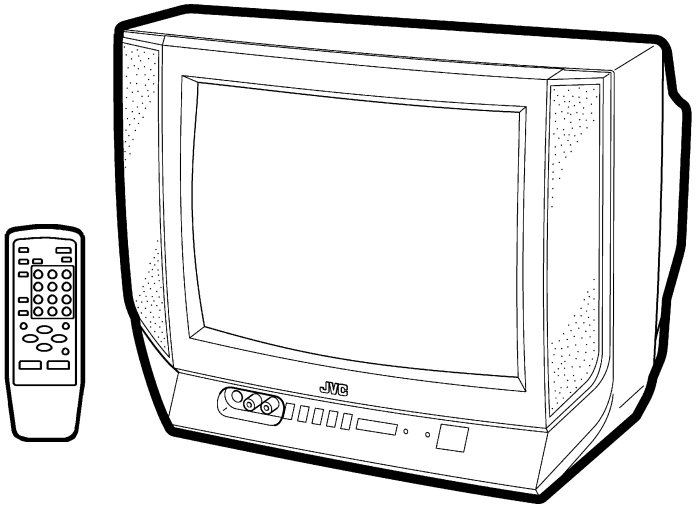
JVC

SERVICE MANUAL

COLOUR TELEVISION

BASIC CHASSIS
CG

AV-14FTG2



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SPECIFICATIONS

ITEM		CONTENT
Dimensions(W × H × D)		462mm × 340.5mm × 375mm
Mass		10kg
TV RF System		B/G, I, D/K, K1,M
Colour System	RF Mode	PAL / SECAM
	VIDEO Mode	PAL / SECAM / NTSC3.58 / NTSC4.43
Picture Tube		Visible size: 34cm measured diagonally
High Voltage		22.5kV±1.5kV(at zero beam current)
Receiving Frequency	VHF (VL)	46.25MHz～168.25MHz
	VHF (VH)	175.25MHz～463.25MHz
	UHF	471.25MHz～863.25MHz
	CATV	Cable TVs of Mid (X-Z+2, S1-S10) Super (S11-S20) & Hyper (S21-S41) bands receivable
Intermediate Frequency	VIF Carrier	38.0MHz
	SIF Carrier	32.5MHz(5.5MHz) 31.5MHz (6.5MHz) 32.0MHz (6.0MHz)
Colour Sub Carrier Frequency		PAL (4.43MHz), SECAM (4.40625MHz / 4.25MHz) NTSC (3.58MHz / 4.43MHz)
Power Input	Rated Voltage	AC110～240V, 50 / 60Hz
Power Consumption		68W (Max) / 47W(Avg.)
Speaker		5cm × 9 cm, Oval type × 2
Audio Output		2W (monaural)
Aerial Input Terminal		75Ω Unbalanced
Input	Video	1V(p-p), 75Ω, RCA × 2 (Front / Rear)
	Audio	500mV(rms) (-4dBs), High impedance, RCA × 2 (Front / Rear)
Output	Video	1V(p-p), 75Ω, RCA × 1
	Audio	500mV(rms) (-4dBs), Low impedance, RCA × 1
Headphone jack		3.5mm mini jack
Remote Control Unit		RM-C364GY (Battery size : AA / R06 / UM-3 × 2)

Design and specifications are subject to change without notice.

SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.

2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.

3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.

4. **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (⏚) side GND and EARTH : (⏚) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.
   If above note will not be kept, a fuse or any parts will be broken.

5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).

6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.

7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.

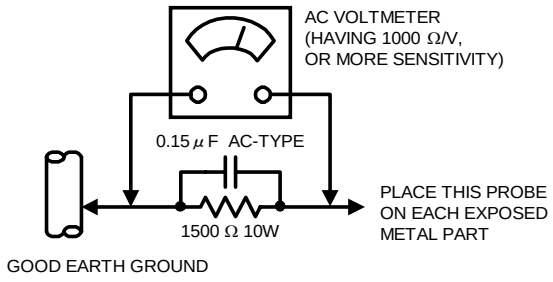
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

9. **Isolation Check**
   (Safety for Electrical Shock Hazard)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.
(. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

(2) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

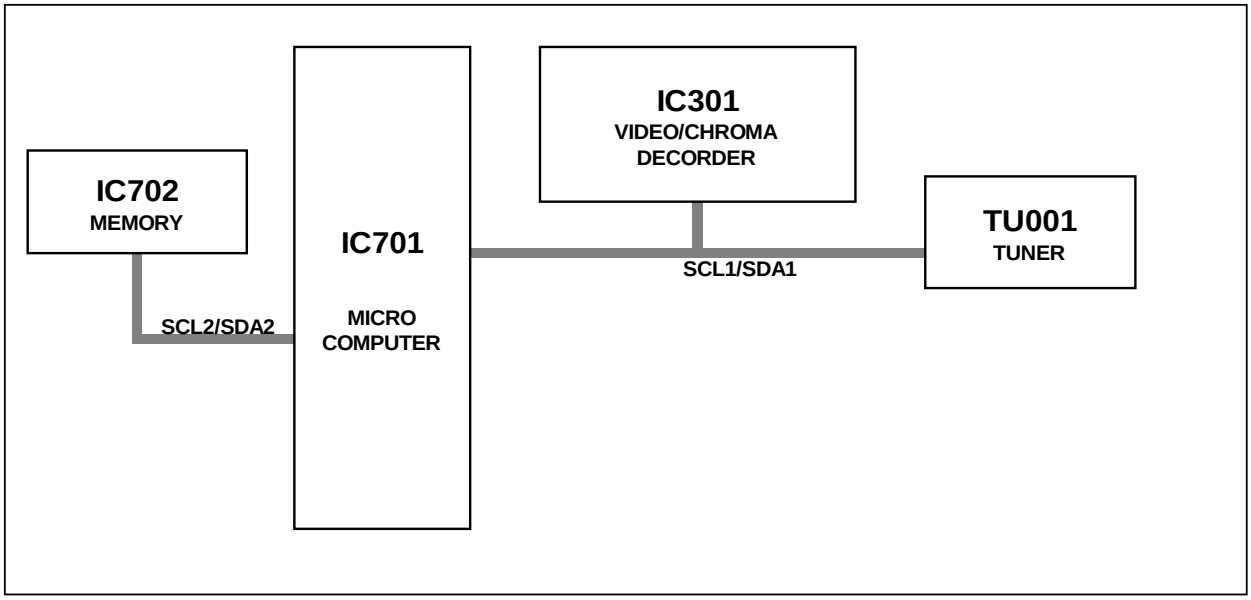
● **Alternate Check Method**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



FEATURES

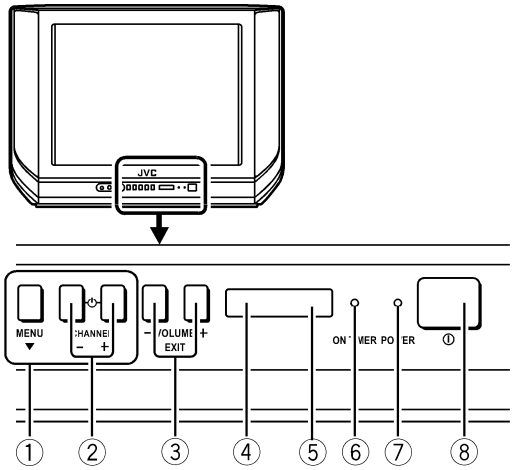
- New chassis design enables use of an interactive on-screen control.
- Wide range voltage (110V～240V) AC power input.
- With AUDIO / VIDEO INPUT & OUTPUT terminal.
- MUTING button can reduce the audio level to zero instantly.
- Functional remote control to operate TV set (for channel select, volume control, power ON/OFF, etc.) from a distance.
- I^2C bus control utilizes single chip ICs for IF, V/C, DEF. VSM PRESET, PRESET & TURBO TIMER.
- By means of AUTO PROGRAM, the TV stations can be selected automatically and the TV channels can also be rearranged automatically.
- Built-in ECO MODE (ECONOMY, ECOLOGY)
  In accordance with the brightness in a room, the brightness and / of contrast of the picture can be adjusted automatically to make the optimum picture which is easy on the eye.
- Built – in ON TIMER, RETURN + & CHILD LOCK.

SYSTEM BLOCK DIAGRAM



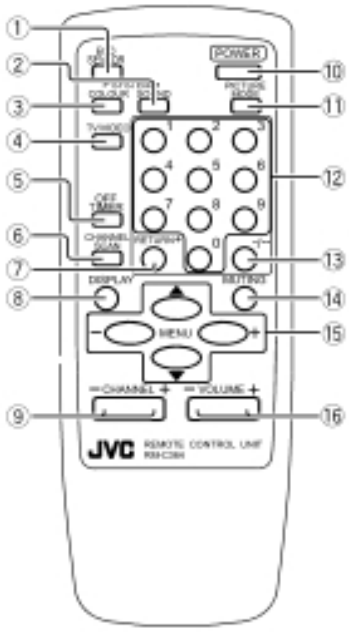
FUNCTIONS

FRONT PANEL



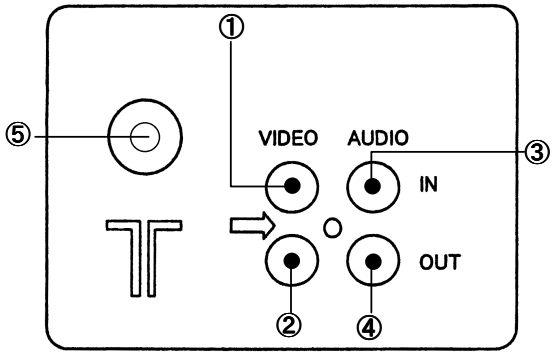
①	MENU buttons • MENU ▼ button • MENU –/+ buttons
②	CHANNEL –/+ buttons
③	VOLUME –/+ buttons
④	ECO sensor
⑤	Remote control sensor
⑥	ON TIMER lamp
⑦	POWER lamp
⑧	Main power button

REMOTE CONTROL UNIT



1	ECO SENSOR key
2	SOUND SYSTEM key
3	COLOUR SYSTEM key
4	TV/VIDEO key
5	OFF TIMER key
6	CHANNEL SCAN key
7	RETURN＋key
8	DISPLAY key
9	CHANNEL －/＋ key
A	POWER key
B	PICTURE MODE key
C	Number (CH.) key
D	－/－－key
E	MUTING key
F	MENU key MENU ▲/▼ key MENU －/＋ key
G	VOLUME －/＋ key

REAR PANEL



①	VIDEO INPUT
②	VIDEO OUTPUT
③	AUDIO INPUT
④	AUDIO OUT PUT
⑤	AERIAL INPUT

SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

REMOVING THE REAR COVER

1. Unplug the power plug.
2. As shown in figure, remove the **5** screws marked Ⓐ and a screw marked Ⓑ .
3. Withdraw the rear cover toward you.

REMOVING THE MAIN PW BOARD

- After removing the rear cover.

1. Slightly raise the both sides of the MAIN PW BOARD by hand and remove the PWB stopper marked Ⓒ from the front cabinet.
2. Withdraw the MAIN PW BOARD backward.
   (If necessary, take off the wire clamp, connectors etc.)

REMOVING THE SPEAKER

- After removing the rear cover.

1. As shown in figure, remove the **2** screws marked Ⓓ .
2. Follow the same steps when removing the other hand speaker.

CHECKING THE MAIN PW BOARD

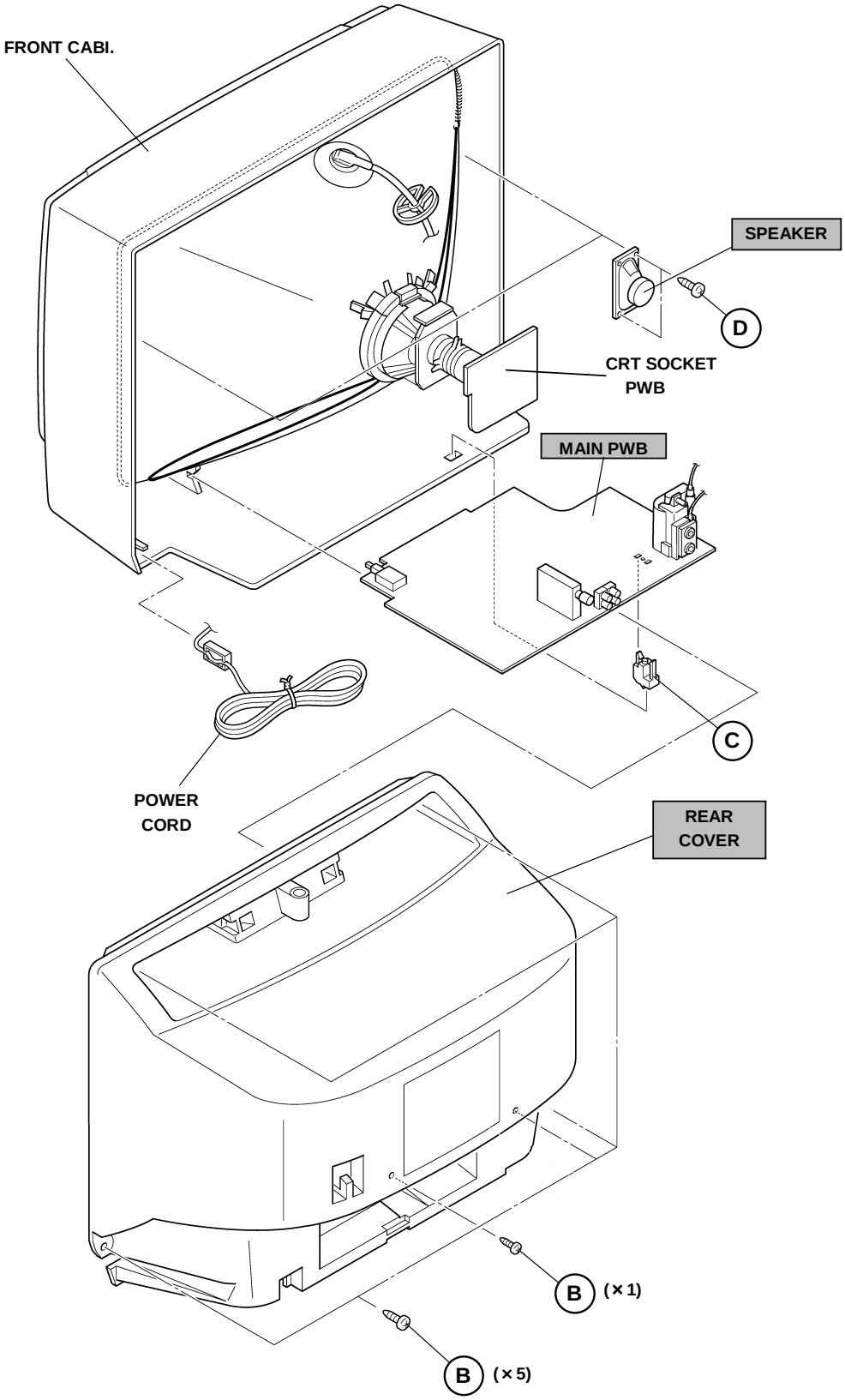
1. To check the back side of the PW Board.
   1) Pull out the MAIN PW Board. (Refer to REMOVING THE MAIN PW Board)
   2) Erect the PW Board vertically so that you can easily check the back side of the PW Board.

[CAUTION]

- When erecting the PW Board, be careful so that there will be no contacting with other PW Board.
- Before turning on power, make sure that the CRT earth wire and other connector are properly connected.

WIRE CLAMPING AND CABLE TYING

1. Be sure to clamp the wire.
2. Never remove the cable tie used for tying the wires together. Should it be inadvertently removed, be sure to tie the wires with a new cable tie.


FRONT CABI.
SPEAKER
D
CRT SOCKET
PWB
MAIN PWB
C
POWER
CORD
REAR
COVER
B (× 1)
B (× 5)

REPLACEMENT OF MEMORY ICs

1. MEMORY ICs

This model uses memory ICs. This memory IC data are for proper operation of the video and deflection circuits.
When replacing memory ICs, be sure to use ICs written with the initial values of data.

2. PROCEDURE FOR REPLACING MEMORY ICs

(1) Power off

Switch the power off and disconnect the power plug from the wall outlet.

(2) Replace ICs

Be sure to use memory ICs written with the initial data values.

(3) Power on

Connect the power plug into the wall outlet and switch the power on.

(4) Check and set SYSTEM CONSTANT SET

▪ It must not adjust without adjustment signals.

1) Press the **DISPLAY** key and the **PICTURE MODE** key of the REMOTE CONTROL UNIT simultaneously.
2) The SERVICE MENU screen of Fig. 1 will be displayed.
3) While the SERVICE MENU is displayed, again press the **DISPLAY** key and **PICTURE MODE** key simultaneously, and the SYSTEM CONSTANT SET screen of Fig. 2 will be displayed.
4) Check the setting values of the SYSTEM CONSTANT SET of Table 1 If the value is different, select the setting item with the **MENU** ▼/▲key, and set the correct value with the **MENU** - / + key.
5) Press the **DISPLAY** key twice, and return to the normal screen.

(5) Receive channel of setting

Refer to the **OPERATING INSTRUCTIONS** and set the receive channels (channels preset) as described

(6) User Setting

Check the user setting value of Table 2, and if setting value is different, set the correct value.

For setting, refer to the **OPERATING INSTRUCTIONS**.

(7) Setting of SERVICE MENU

Verify the setting items of the SERVICE MENU of Table 3, and reset where necessary.

For setting, refer to the **SERVICE ADJUSTMENTS**.

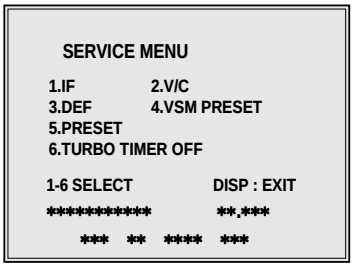


Fig.1

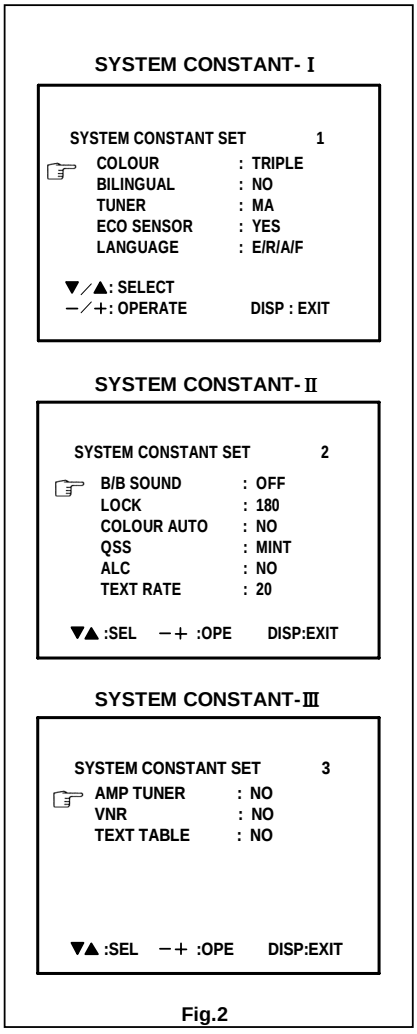
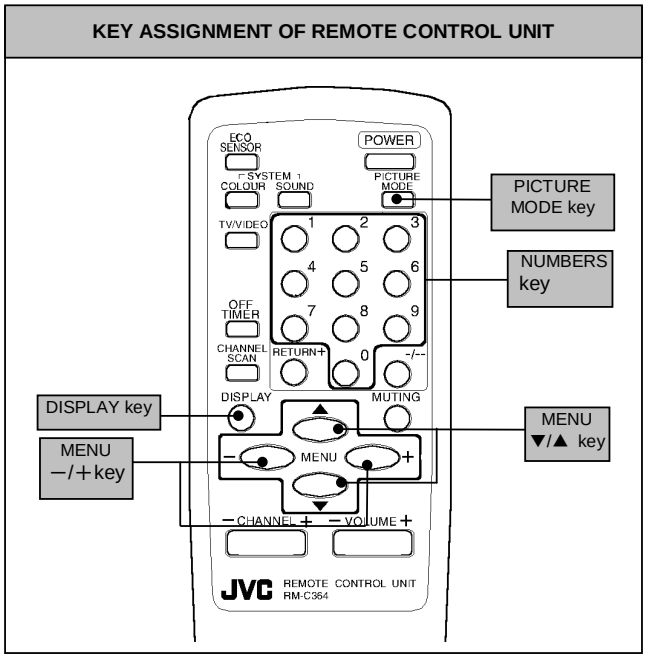


Fig.2

KEY ASSIGNMENT OF REMOTE CONTROL UNIT



SETTING OF SYSTEM CONSTANT SET

Setting item	Setting contents	Setting value
COLOUR	MULTI. → TRIPLE → PAL	TRIPLE
BILINGUAL	YES → NO	NO
TUNER	MU → MA	MU
ECO SENSOR	YES → NO	YES
LANGUAGE	E/R/A/F → E/A/F → E/A → E/F	E/R/A/F
B/B SOUND	ON → OFF	OFF
LOCK	YES ↔ 10 ↔ 20 ↔ ～ ↔ 230 ↔ 240 ↔ 250	180
COLOUR AUTO	YES → NO	NO
QSS	MINT → MQSS	MINT
ALC	YES → NO	NO
TEXT RATE	10 ↔ 20 ↔ 40 ↔ 80	20
AMP TUNER	YES → NO	NO
VNR	YES → NO	NO
TEXT TABLE	ARA → CYL	CYL

Table 1

USER SETTING VALUES

Setting item	Setting value	Setting item	Setting value
SUB POWER	ON	BILINGUAL MODE	ON
CHANNEL POSITION	1 POSITION	LANGUAGE	ENGLISH
VOLUME	About 10	CHANNEL PRESET	Refer to OPERATING INSTRUCTION
TV/VIDEO	TV	ECO SENSOR	OFF
ON SCREEN DISPLAY	POSITION INDICATION	VNR	OFF
COLOUR SYSTEM	AUTO PAL	AUTO SHUTOFF	OFF
SOUND SYSTEM	B / G	ON TIMER	PR1 0:00
OFF TIMER	OFF	BLUE BACK	OFF
PICTURE MODE (VSM)	BRIGHT	CHILD LOCK	OFF

Table 2

INITIAL SETTING VALUE OF SERVICE MENU

1. **Adjustment of the SERVICE MENU is made on the basis of the initial setting values ; however, the new setting values which set the screen in its optimum condition may differ from the initial setting.**
2. **Do not change the initial Setting Values of the Setting (Adjustment) items not listed In "ADJUSTMENT".**

2. V/C

Setting item \ Colour system		Variable range	Initial setting value			
			PAL	SECAM	NTSC 3.58	NTSC 4.43
1. CUT OFF	RED	-128～+127	-50	←	←	←
	GREEN					
	BLUE					
2. DRIVE	RED	-128～+127	+ 0	←	←	←
	BLUE					
3. BRIGHT		-127～+127	+ 0	←	←	←
4. CONT.		-63～+63	+ 0	←	←	←
5. COLOUR		-63～+63	+ 0	←	←	←
6. TINT	TV	-63～+63	——	——	+ 0	+ 0
	VIDEO		——	——	+ 0	+ 0
7. SECAM BL ADJ.		-31～+31	+ 0	←	←	←
8. SHARP(Do Not Adj.)	TV	-32～+31	-15(Fixed)	←	←	←
	VIDEO		+5(Fixed)			

3. DEFLECTION

Setting item	Variable range	Initial setting value	
		fv : 50Hz MODE	fv : 60Hz MODE
1. VER. POSITION	-04 ～ +03	- 2	- 3
2. HOR. POSITION	-16 ～ +15	+1	+ 4
3. VER. HEIGHT	-64 ～ +63	-40	+ 0
4. VER. LINEARITY	-32 ～ +31	+13	- 3
5. VER. SCURVE	-32 ～ +31	-32	+ 0
6. HOR. VCO ADJUST	-63 ～ +62	+ 0	+ 0

4. VSM PRESET

VSM preset mode / VSM Setting item	BRIGHT	STANDARD	SOFT
TINT SETTING VALUE	+15	←	←
COLOUR SETTING VALUE	+15	←	←
BRIGHT SETTING VALUE	+15	←	←
CONT. SETTING VALUE	+30	+15	+11
SHARP SETTING VALUE	+15	←	+12

5. PRESET

The items in the following table, it is no requirement for adjustment.
If values had changed by the miss operation, set the initial setting values in the following table.

Colour System (Do Not Adjust)

Setting item		Initial setting value (Fixed value)			
		PAL	SECAM	NTSC 3.58	NTSC 4.43
1. C TRAP FIX		1	1	1	1
2. SHARP PEAK		0	0	0	0
3. ABL		1	1	1	1
4. GAMMA		0	0	0	0
5. Y. DELAY TIME	TV	0	2	2	3
	VIDEO	0	2	0	2
6. BLACK EXP START		3	3	3	3
7. C-BPF	TV	1	1	0	0
	VIDEO	1	1	1	1
8. CW / SCP		+0	+0	+0	+0
9. VIF DET LEVEL		0	0	0	0
11. IF AGC MIN		0	0	0	0
12. VIF AGC		0	0	0	0
13. VIF PMOD		0	0	0	0
19. VNR		15	15	15	15
20. RGB LIM		1	1	1	1
21. RGB LIMIT LEVEL		2	2	2	2
23. TEXT H. POSITION		-3	-3	-3	-3
24. READ DATA		———	———	———	———

Sound System (Do Not Adjust)

Setting item	B/G	I	D/K	M
10. SIF DET LEVEL	+0	+0	+0	+0
14. SIF BPF BW ADJUST	+0	+0	+0	+0
15. SIF TRAP FO ADJUST	+0	+0	+0	+0
16. SIF TRAP FO ADJUST 2	+0	+0	+0	+0
17. SIF -TRAP	0	0	0	0
18. SIF -BPF	0	0	0	1
22. SIF SW	1	1	1	0

REPLACEMENT OF IC301 (IF V/C DECODER)

- **For the IC301(IF V/C DECODER) of this model, all data are written in the micro-computer. So, write the data in the micro-computer in accordance with the following procedures before starting adjustment.**

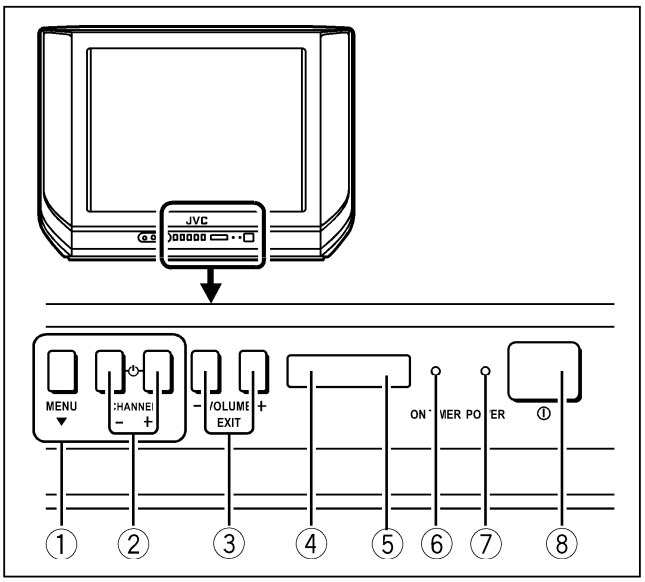
REPLACING PROCEDURES

(1) Turn the POWER OFF.

(2) Replace the IC301 with a new one.

(3) While pressing MENU button and VOL+ button ON the FRONT CABINET simultaneously, turn the POWER ON. When the POWER is turned ON, the data is written in the micro-computer immediately.

LOCATIONS OF FRONT PANEL BUTTONS AND LAMPS



① MENU buttons
- MENU ▼ button
- MENU –/+ buttons

② CHANNEL –/+ buttons

③ VOLUME –/+ buttons

④ ECO sensor

⑤ Remote control sensor

⑥ ON TIMER lamp

⑦ POWER lamp

⑧ Main power button

SERVICE ADJUSTMENT

BEFORE STARTING SERVICE ADJUSTMENT

1. **There are 2 way of adjusting this TV: One is with the REMOTE CONTROL UNIT and the other is the conventional method using adjustment parts and components.**
2. **The adjustment with the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to its optimum condition may differ from the initial setting values.**
3. Make sure that connection is correctly made to AC power source.
4. Turn on the power of the set and equipment before use, and start the adjustment procedures after waiting at least 30 minutes.
5. Unless otherwise specified, prepare the most suitable reception or input signal for adjustment.
6. **Never touch any adjustment parts, which are not specified in the list for this adjustment VRs, transforms, condensers, etc.**
7. Preparation for adjustment
   Unless otherwise specified in the adjustment instructions, preset the following functions with the REMOTE CONTROL UNIT.

User mode position

PICTURE MODE (VSM)	BRIGHT
VNR	OFF
COLOUR / BRIGHT CONT. / SHARP	Refer to VSM PRESET
BLUE BACK	OFF
OFF TIMER	OFF
ECO SENSOR	OFF
AUTO SHUT OFF	OFF

MEASURING INSTRUMENT AND FIXTURES

1. DC voltmeter (or digital voltmeter)
2. Oscilloscope
3. Signal generator (Pattern generator) [PAL / SECAM / NTSC]
4. Remote control unit

ADJUSTMENT ITEMS

Adjustment item	Adjustment item
B1 POWER SUPPLY	DEF. circuit adjustment
FOCUS adjustment	VSM PRESET setting
IF circuit adjustment	PURITY, CONVERGENCE
V/C (Video / Chroma) circuit adjustment	

BASIC OPERATION OF SERVICE MENU

- **The adjustment using SERVICE MENU**

The following adjustment items use the SERVICE MENU in the series of the adjustment. The adjustments are made on the basis of the initial setting values. The adjustment values which adjust the screen to the optimum condition can be different from the initial setting values. With the SERVICE MENU, various settings can be made, and they are broadly classified in the following items of settings.

1.IF ····· Adjustment of the IF circuit.
2.V/C ····· Adjustment of the VIDEO/CHROMA circuit.
3.DEF ····· Adjustment of the DEFLECTION circuit.
4.VSM PRESET ····· Adjustment of the initial setting values of VSM condition as STANDARD, SOFT and BRIGHT. (VSM : Video Status Memory)
5.PRESET ····· Adjustment of the RF circuit **[Do not adjust]**.
6.TURBO TIMER····· For quick setting the TIMER count value, adjustable not only by minuets but also by second. **[Should be OFF]**.

- **Key operation of the SERVICE MENU**

[Enter to SERVICE MENU]

Press the **DISPLAY** key and the **PICTURE MODE** key of the REMOTE CONTROL UNIT simultaneously. Then enter the SERVICE MENU mode as shown in Fig.1.

[Exit from SERVICE MENU]

When complete the adjustment work, press the **DISPLAY** key to return to the SERVICE MENU.
And then press the **DISPLAY** key again, return to the normal screen.

[Select from main menu]

In main SERVICE MENU, press the number (1～6) key of the remote control unit, to select any of the adjustment items.
The colours which selected item characters are changed.

SERVICE MENU

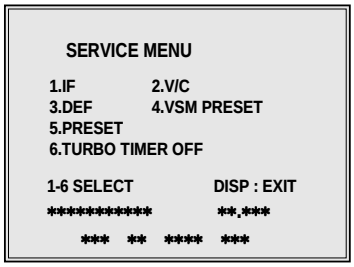
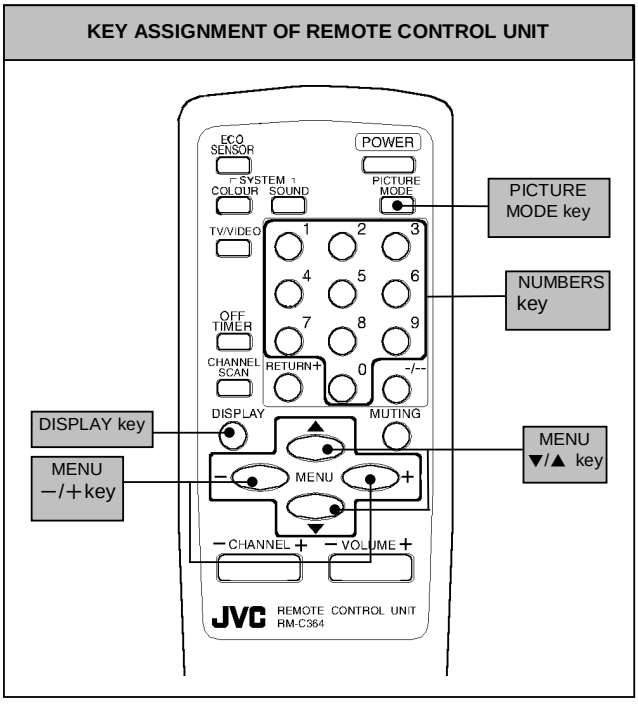


Fig.1

KEY ASSIGNMENT OF REMOTE CONTROL UNIT



[Method of setting]

1. IF

[1. VCO]

① 1 Key ····· Select **1.IF**.

② 1 Key ····· Select **1.VCO**

③ The VCO (CW) screen will be displayed a allow mark when the AFC voltage is at a certain level.

④ DISPLAY Key ····· As you press this twice, you will return to the **SERVICE MENU**.

[2. DELAY POINT]

① 1 Key ····· Select **1.IF**.

② 2 Key ····· Select **2.DELAY POINT**.

③ MENU -/+ ····· Set (adjust) the setting values of the setting items.

DISPLAY Key ····· When this is pressed twice, you will return to the **SERVICE MENU**.

2.V/C, 3.DEF and **4.VSM PRESET**

① 2~4Key ····· Select one from **2. V/C, 3. DEF** and **4. VSM PRESET**.

② MENU ▼/▲ Key ····· Select setting items.

③ MENU -/+ ····· Adjust the values of the items.

④ DISPLAY Key ····· When this is pressed twice, return to the **SERVICE MENU**.

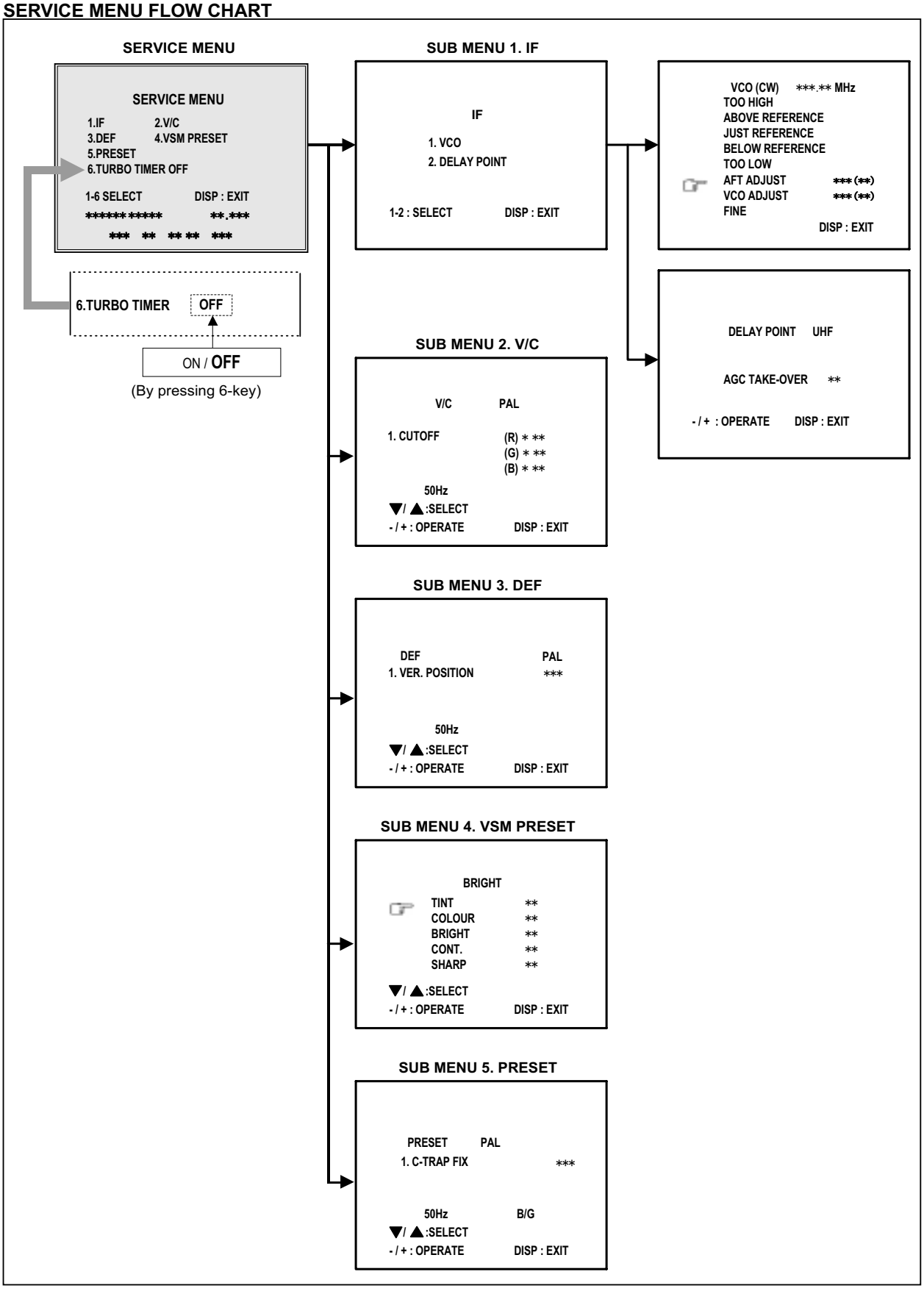
6.TURBO TIMER

① By pressing the 6 key, you can change the ON or OFF (**should be OFF**).

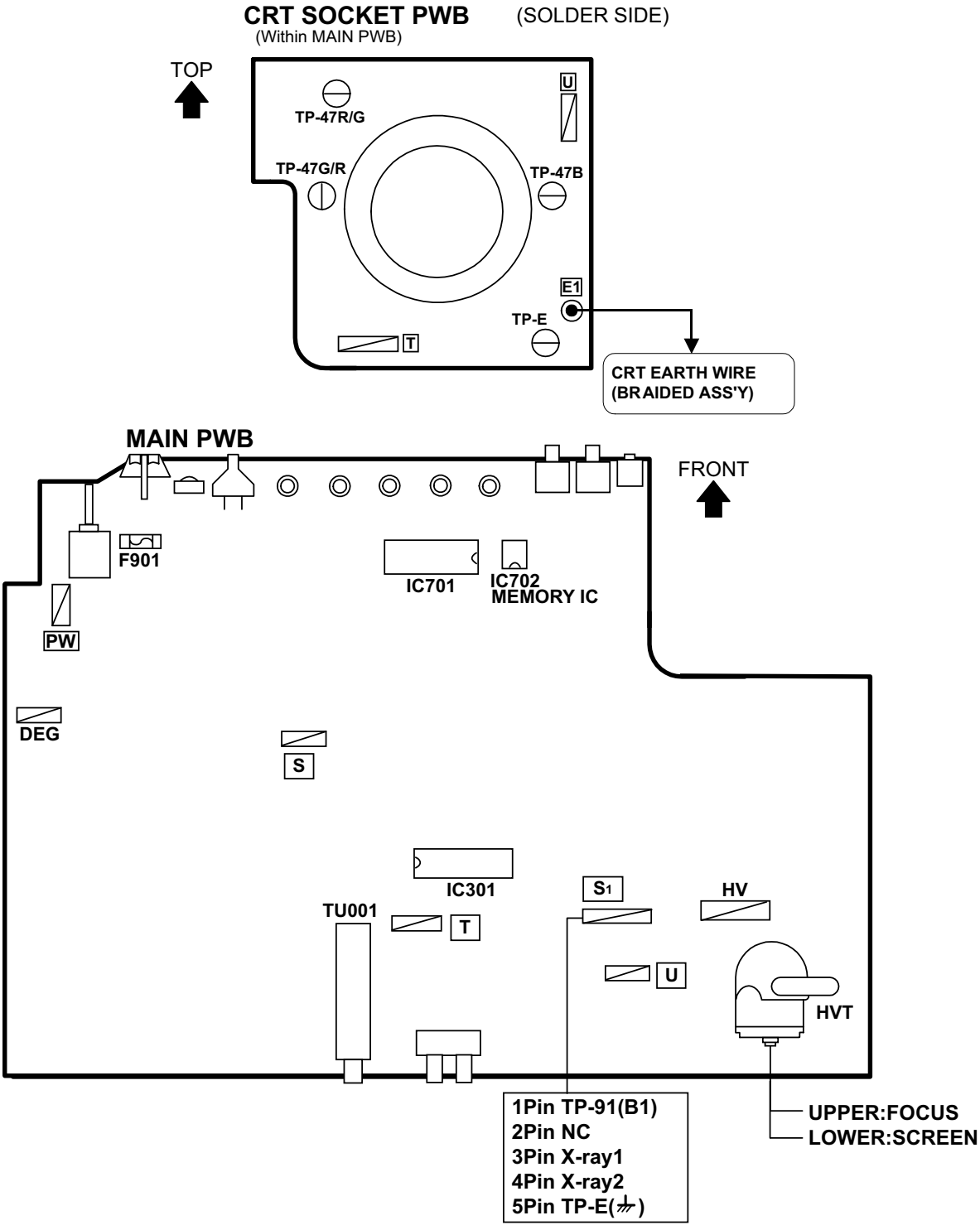
(Should be OFF)

∗ If it is ON, the timer in TIMER mode changes from 1 minute into 1 sec temporarily.
(It is easier to checks the Operation of TIMER)
If you turn the TV power off, this setting becomes OFF automatically.

SERVICE MENU FLOW CHART



ADJUSTMENT LOCATIONS



ADJUSTMENTS

B1 POWER SUPPLY

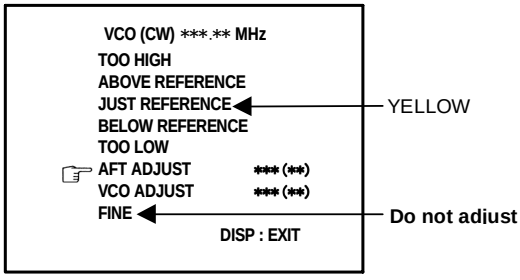
Item	Measuring instrument	Test point	Adjustment part	Description
Check of B1 Power Supply	**Signal generator** **DC Volt-meter**	**TP-91 (B1)** **TP-E (⏚)**		1. Input a whole black signal. 2. Connect a DC voltmeter to TP-91(B1) and TP-E (⏚). 3. Make sure that the voltage is DC114.5±1.5V.

FOCUS ADJUSTMENT

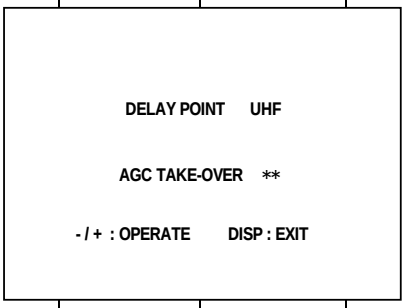
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of FOCUS	**Signal generator**		**FOCUS VR** **[In HVT]**	1. Input a cross-hatch signal. 2. While watching the screen, adjust the FOCUS VR to make the vertical and horizontal lines as fine and sharp as possible. 3. Make sure that when the screen is darkened, the lines remain in good focus.

IF CIRCUIT ADJUSTMENT

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of VCO(CW)	**Signal generator** **Remote control unit**		**1. VCO**	●Please use signal generator which is correct proof about the sending frequency. 1. Input the PAL full colour bar (210.25MHz) signal. 2. Select 1.IF from the **SERVICE MENU**. 3. Press 1 key and select **1.VCO**. 4. Select **VCO ADJUST** with **MENU** ▲/▼ key. 5. Press **MENU** -/+ key until the colour of the characters TOO HIGH changes blue to yellow. Then gradually press the **MENU** -/+ key until the TOO LOW changes yellow. At this time, confirm that the value of **VCO ADJUST** is near +00. 6. Select **AFT ADJUST** with **MENU** ▲/▼ key. 7. Press **MENU** -/+ key until the characters JUST REFERENCE changes blue to yellow. 8. Press the **DISPLAY** key three times to return to normal screen.



Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of DELAY POINT (AGC)	**Signal generator** **Remote control unit**		**DELAY POINT** **(AGC TAKE-OVER)**	1. Input a black and white signal (colour off). 2. Select **1. IF** from the SERVICE MENU. 3. Select **2. DELAY POINT** by pressing the **2** key on the remote control unit. 4. Adjust the MENU - or + key until video noise disappears. 5. Turn to other channels and make sure that there are no irregularities.



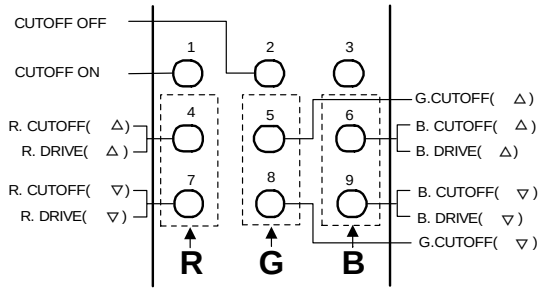
Setting Item		Variable range	Initial setting value
DELAY POINT (AGC TAKE OVER)	**NTSC 3.58**	0～127	48
	OTHER		43

VIDEO / CHROMA CIRCUIT ADJUSTMENT

The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values.
The setting values which adjust the screen to the optimum condition can be different from the initial setting values.
Do not change the initial setting values of the setting items not listed in "ADJUSTMENT".

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>Adjustment of WHITE BALANCE (Low light)</td><td>Signal generator

Remote control unit</td><td></td><td>1. CUT OFF (R)
CUT OFF (G)
CUT OFF (B)

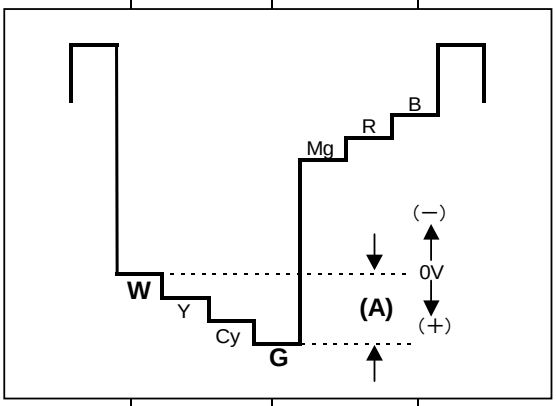
SCREEN VR
[IN HVT]</td><td>1. Input a black and white signal (colour off).
2. Select 2. V/C from the SERVICE MENU, then select 1. CUT OFF (R), (G) and (B) .
3. Set each value to initial setting value with 4～9 keys of the remote control unit.
4. Press the 1 key of the remote control unit to show the single horizontal line on screen.
5. Turn the SCREEN VR fully counter-clockwise, then slowly turn it clockwise to where one of a red, blue or green colour is faintly visible.
6. Use keys 4～9 of the remote control unit and adjust the other 2 colours which except the appeared colour to where the single horizontal line appears white.
7. Turn the SCREEN VR to where the single horizontal line glows faintly.
8. Press the 2 key to turn off the single horizontal line.
9. Press the DISPLAY key twice to return to the normal screen.</td></tr>
<tr><td colspan="5">
V/C PAL
1. CUTOFF (R) * **
(G) * **
(B) * **
50Hz
▼/▲ :SELECT
- / + : OPERATE DISP : EXIT
</td></tr>
<tr><td colspan="5">
KEY ASSIGNMENT OF REMOTE CONTROL UNIT


</td></tr>
<tr><td colspan="5">
<table>
<tr><th colspan="2">Adjustment item</th><th>Variable range</th><th>Initial setting value</th></tr>
<tr><td rowspan="3">1. CUT OFF</td><td>R</td><td>-128～+127</td><td>-50</td></tr>
<tr><td>G</td><td>-128～+127</td><td>-50</td></tr>
<tr><td>B</td><td>-128～+127</td><td>-50</td></tr>
</table>
</td></tr>
<tr><td>Adjustment of WHITE BALANCE (High light)</td><td>Signal generator

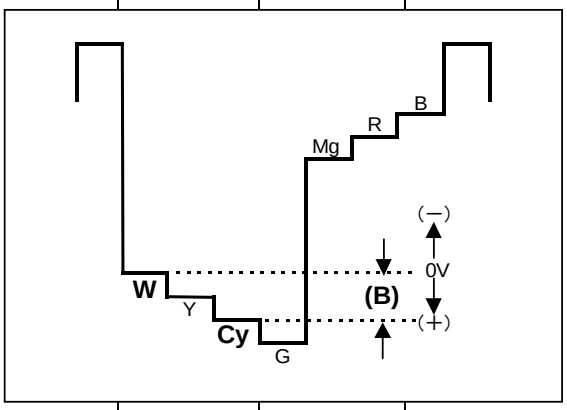
Remote control unit</td><td></td><td>2. DRIVE (R)
DRIVE (B)</td><td>1. Input a black and white signal (colour off).
2. Select 2. V/C from the SERVICE MENU.
3. Select 2. DRIVE (R) / (B) with MENU ▼/▲ key, and set each value to initial setting value with 4 and 7 or 6 and 9 keys of the remote control unit.
4. Use the keys 4 and 7 or 6 and 9 to produce a white screen
5. Press the DISPLAY key twice to return to the nomal screen.</td></tr>
<tr><td colspan="5">
V/C PAL
2. DRIVE (R) * **
(B) * **
50Hz
▼/▲ :SELECT
- / + : OPERATE DISP : EXIT
</td></tr>
<tr><td colspan="5">
<table>
<tr><th colspan="2">Adjustment item</th><th>Variable range</th><th>Initial setting value</th></tr>
<tr><td rowspan="2">2. DRIVE</td><td>R</td><td>-64～+63</td><td>+0</td></tr>
<tr><td>B</td><td>-64～+63</td><td>+0</td></tr>
</table>
</td></tr>
</table>

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB BRIGHT	**Remote control unit**		**3. BRIGHT**	1. Receive any broadcast. 2. Select **2. V/C** from SERVICE MENU. 3. Select **3. BRIGHT** with the MENU ▼/▲key. 4. Set the initial setting value with the MENU - or + key. 5. If the brightness is not the best with the initial set value, make fine adjustment until you get the best brightness.
Adjustment of SUB CONT.	**Remote control unit**		**4. CONT.**	1. Receive any broadcast. 2. Select **2. V/C** from SERVICE MENU. 3. Select **4. CONT**. with the MENU ▼/▲key. 4. Set the initial setting value with the MENU - or + key. 5. If the contrast is not the best with the initial set value, make fine adjustment until you get the best contrast.
Adjustment of SUB COLOUR Ⅰ	**Remote control unit**		**5. COLOUR**	**[Method of adjustment without measuring instrument]**
			PAL COLOUR	1. Receive a PAL broadcast. 2. Select **2. V/C** from the SERVICE MENU. 3. Select **5. COLOUR** with the MENU ▼/▲ key. 4. Set the initial setting value for PAL COLOUR with the MENU - or + key. 5. If the colour is not the best with the initial set value, make fine adjustment until you get the best colour.
			SECAM COLOUR	1. Receive a SECAM broadcast. 2. Make fine adjustment of SECAM COLOUR as previously.
			NTSC 3.58 COLOUR	1. Receive a NTSC 3.58MHz broadcast. 2. Make similar fine adjustment of NTSC 3.58 COLOUR as previously.
			NTSC 4.43 COLOUR	When NTSC 3.58 adjustment completed, NTSC 4.43 will be automatically set at the respective values.

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB COLOUR Ⅱ	**Signal generator** **Oscillo-scope** **Remote control unit**	**TP-47R/G** **TP-E (⏚)** **[CRT SOCKET PWB]**	**5. COLOUR**	**[Method of adjustment using measuring instrument]**
			PAL COLOUR	1. Input a PAL full field colour bar signal (75% white). 2. Select **2. V/C** from SERVICE MENU. 3. Select **5. COLOUR** with the MENU ▼/▲ key. 4. Set the initial setting value of PAL COLOUR with the MENU - or + key. 5. Connect the oscilloscope between TP-47R/G and TP-E. Adjust PAL COLOUR to bring the value of **(A)** in the illustration to **+9V (W&G)**.
			SECAM COLOUR	1. Input a SECAM full field colour bar signal (75% white). 2. Set the initial setting value of SECAM COLOUR with the MENU - or + key. Adjust SECAM COLOUR to bring the value of **(A)** in the illustration to **+3V (W&G)**.
			NTSC 3.58 COLOUR	1. Input a NTSC 3.58 full field colour bar signal (75% white). 2. Set the initial setting value of NTSC 3.58 COLOUR with the MENU - or + key. Adjust NTSC 3.58 COLOUR to bring the value of **(A)** in the illustration to **+6V (W&G)**
			NTSC 4.43 COLOUR	When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

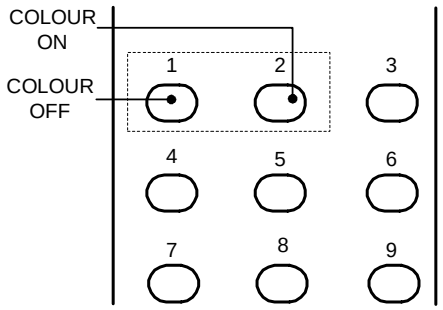


Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of TINT Ⅰ	**Signal generator** **Remote control unit**		**6. TINT**	**[Method of adjustment without measuring instrument]**
			NTSC 3.58 TINT	1. Input a NTSC 3.58 full field colour bar signal (75% white). 2. Select **2. V/C** from SERVICE MENU. 3. Select **6. TINT** with the MENU ▼/▲ key. 4. Set the initial setting value of NTSC 3.58 with the MENU - or + key. 5. If you cannot get the best tint with the initial setting value, make fine adjustment until you get the best tint.
			NTSC 4.43 TINT	When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.
Adjustment of TINT Ⅱ	**Signal generator** **Oscillo-scope** **Remote control unit**	**TP-47R/G** **TP-E (⏚)** **[CRT SOCKET PWB]**	**6. TINT**	**[Method of adjustment using measuring instrument]**
			NTSC 3.58 TINT	1. Input a NTSC 3.58 full field colour bar signal (75% white). 2. Select **2. V/C** from SERVICE MENU. 3. Select **6. TINT** with the MENU ▼/▲ key. 4. Set the initial setting value of NTSC 3.58 with the MENU - or + key. 5. Connect the oscilloscope between TP-47R/G and TP-E. 6. Adjust NTSC 3.58 TINT to bring the value of **(B)** in the illustration to **+6V (W&Cy)**
			NTSC 4.43 TINT	When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.



Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SECAM BLACK OFFSET	**Remote control unit** **Signal generator**			**[Method of adjustment using measuring instrument]**
			7.SECAM BL ADJUST	1. Receive a SECAM full field colour bar signal. 2. Select **2. V/C** from SERVICE MENU. 3. Select **7. SECAM BL ADJUST** with ▼/▲MENU key. 4. Set the initial setting value with the – or + MENU key. 5. Switch the ①key (colour OFF) and ②key (colour ON) on the remote control and make sure that there is no colour on the black and white screen. 6. If the black and white screen is not best with the initial setting value, make fine adjustment until you get the best black and white screen. 7. Press the DISPLAY key twice to return to the normal screen.

KEY ASSIGNMENT OF REMOTE CONTROL UNIT



DEFLECTION CIRCUIT ADJUSTMENT

- There are 2 modes of adjustment (setting value) ------ ① 50Hz mode and ② 60Hz mode ----- depending upon the kind of signals (vertical frequency 50Hz / 60Hz).
- When adjusted in mode ① , mode ② will be automatically set.

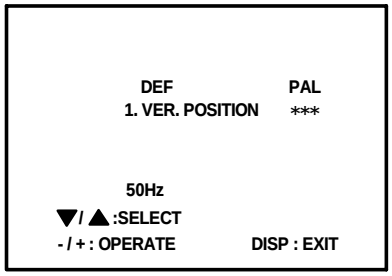
The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values.
The setting values which adjust the screen to the optimum condition can be different from the initial setting values.

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>Adjustment of V.HEIGHT & V.POSITION</td><td>Signal generator

Remote control unit</td><td></td><td>1. VER. POSITION
3. VER. HEIGHT</td><td>1. Input a cross-hatch signal.
2. Select 3. DEF. from SERVICE MENU.
3. Select 1. VER. POSITION with the MENU ▼/▲ key.
4. Set the initial setting value with the MENU - / + key.
5. Adjust VER. POSITION it be the vertical center with the MENU - / + key.
6. Select 3. V. HEIGHT with the MENU ▼/▲ key.
7. Set the initial setting value with the MENU - / + key.
8. As shown in Fig.1, adjust VER. HEIGHT and make the vertical screen size 92% of the picture size with the MENU - / + keys of remote control unit.</td></tr>
<tr><td>Adjustment of HOR. POSITION</td><td>Signal generator

Remote control unit</td><td></td><td>2.HOR. POSITION</td><td>9. Input a circle pattern signal.
10. Select 2. HOR POSITION with the MENU ▼/▲ key.
11. Set the initial setting value of 2. HOR. POSITION with the MENU - / + key.
12. Adjust 2. HOR. POSITION to make H=H" as shown in Fig.2 with the MENU - / + key.</td></tr>
</table>

SUB MENU 3. DEF



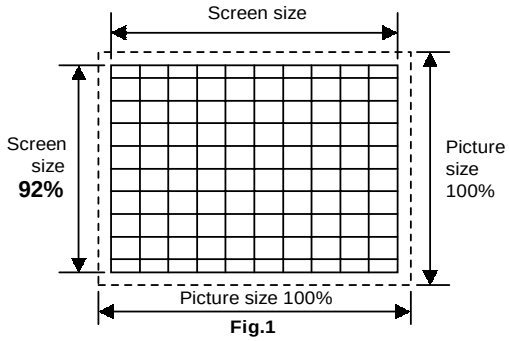


Fig.1

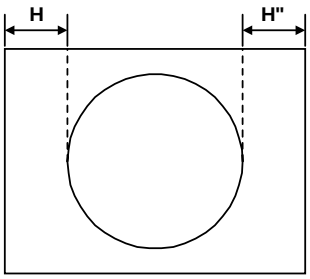


Fig.2

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of VER. LIN. & VER. SCURVE	**Signal generator** **Remote control unit**		**4. VER. LIN.** **5. VER. SCURVE**	● **When the vertical linearity has been deteriorated remarkably, perform the following steps.** 13. Input a cross-hatch signal. 14. Select **4. VER. LIN.** with the MENU ▼/▲ key. 15. Set the initial setting value of **4. VER LIN.** with the MENU - / + key. 16. Select **5. VER. SCURVE** with the MENU ▼/▲ key. 17. Set the initial setting value of **5. VER. SCURVE** with the MENU - / + key. 18. Adjust **4. VER. LIN.** and **5. VER. SCURVE** so that the spaces of each line as shown in Fig.3 on **TOP**, **CENTER** and **BOTTOM** become uniform. Make sure that the adjustment is properly done on the screen of 60Hz mode. **[NOTE]** ● Adjust to make both 50Hz & 60Hz are the same v. size and fine straight line. ● When adjust again, adjust 50Hz mode first. ● When adjust in 60Hz mode, only 60Hz mode is adjust.

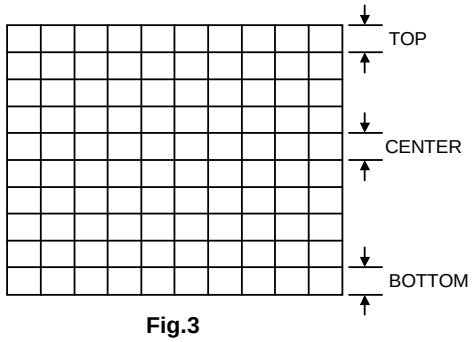
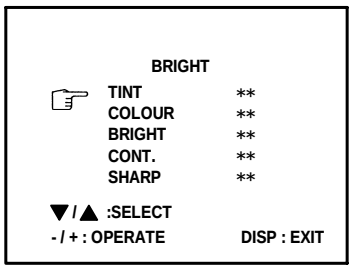


Fig.3

VSM PRESET SETTING

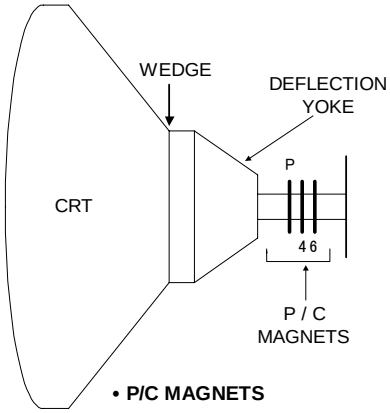
Item	Measuring instrument	Test point	Adjustment part	Description
Setting of VSM PRESET	**Remote control unit**		**TINT** **COLOUR** **BRIGHT** **CONT.** **SHARP**	1. Select **4. VSM PRESET** from the SERVICE MENU. 2. Select BRIGHT with the PICTURE MODE key. 3. Adjust the MENU ▼/▲ and MENU - or + key to bring the set values of **TINT ～ SHARP** to the values shown in the table. 4. Respectively select the VSM PRESET mode for SOFT and STANDARD, and make similar adjustment as in 3 above.



PURITY / CONVERGENCE ADJUSTMENT

PURITY ADJUSTMENT

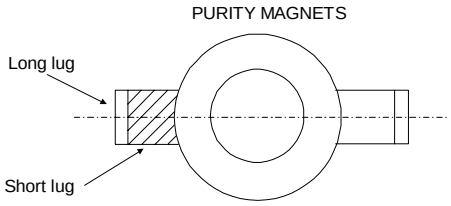
1. Demagnetize CRT with the demagnetizer.
2. Loosen the retainer screw of the deflection yoke.
3. Remove the wedges.
4. Input a green raster signal from the signal generator, and turn the screen to green raster.
5. Move the deflection yoke backward.
6. Bring the long lug of the purity magnets on the short lug and position them horizontally. (Fig.2)
7. Adjust the gap between two lugs so that the GREEN RASTER will come into the center of the screen. (Fig.3)
8. Move the deflection yoke forward, and fix the position of the deflection yoke so that the whole screen will become green.
9. Insert the wedge to the top side of the deflection yoke so that it will not move.
10. Input a crosshatch signal.
11. Verify that the screen is horizontal.
12. Input red and blue raster signals, and make sure that purity is properly adjusted.



• P/C MAGNETS

P : PURITY MAGNET
4 : 4 POLES (convergence magnets)
6 : 6 POLES (convergence magnets)

Fig.1



Bring the long lug over the short lug and position them horizontally.

Fig.2

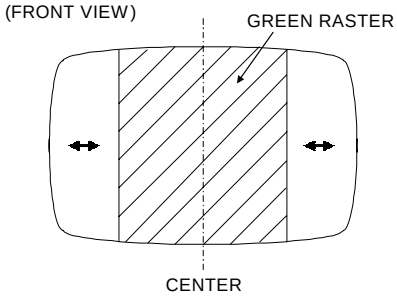


Fig.3

STATIC CONVERGENCE ADJUSTMENT

1. Input a crosshatch signal.
2. Using 4-pole convergence magnets, overlap the red and blue lines in the center of the screen (Fig.1) and turn them to magenta (red/blue).
3. Using 6-pole convergence magnets, overlap the magenta(red/blue) and green lines in the center of the screen and turn them to white.
4. Repeat 2 and 3 above, and make best convergence.

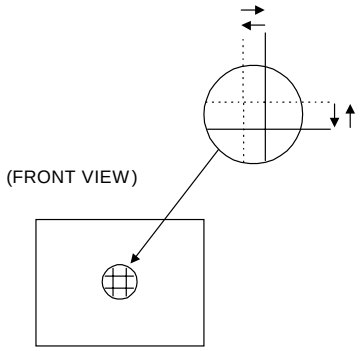


Fig.1

DYNAMIC CONVERGENCE ADJUSTMENT

1. Move the deflection yoke up and down and overlap the lines in the periphery. (Fig. 2)
2. Move the deflection yoke left to right and overlap the lines in the periphery. (Fig. 3)
3. Repeat 1 and 2 above, and make best convergence.

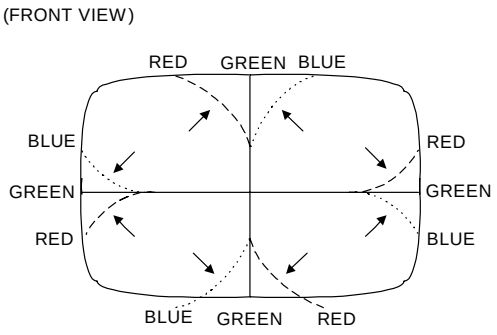


Fig.2

- After adjustment, fix the wedge at the original position.
  Fasten the retainer screw of the deflection yoke.
  Fix the 6 magnets with glue.

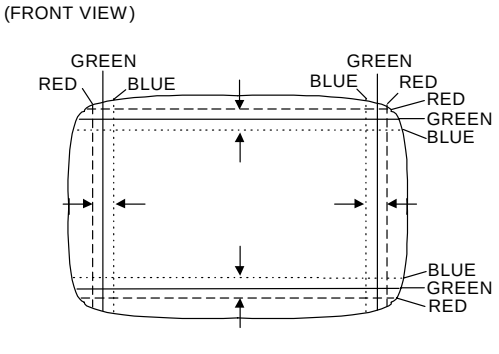


Fig.3

REPLACEMENT OF CHIP COMPONENT

■ CAUTIONS

1. Avoid heating for more than 3 seconds.
2. Do not rub the electrodes and the resist parts of the pattern.
3. When removing a chip part, melt the solder adequately.
4. Do not reuse a chip part after removing it.

■ SOLDERING IRON

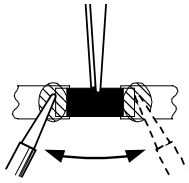
1. Use a high insulation soldering iron with a thin pointed end of it.
2. A 30w soldering iron is recommended for easily removing parts.

■ REPLACEMENT STEPS

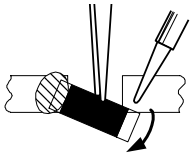
1. How to remove Chip parts

◆ **Resistors, capacitors, etc.**

(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

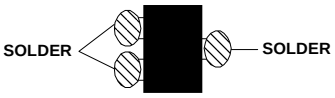


(2) Shift with tweezers and remove the chip part.

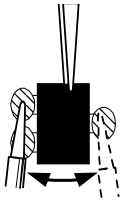


◆ **Transistors, diodes, variable resistors, etc.**

(1) Apply extra solder to each lead.



(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.

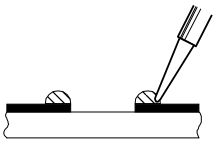


Note : After removing the part, remove remaining solder from the pattern.

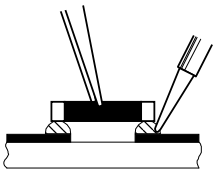
2. How to install Chip parts

◆ **Resistors, capacitors, etc.**

(1) Apply solder to the pattern as indicated in the figure.



(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

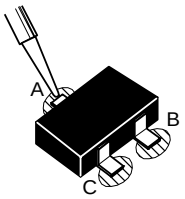


◆ **Transistors, diodes, variable resistors, etc.**

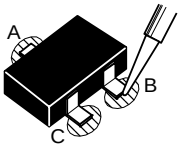
(1) Apply solder to the pattern as indicated in the figure.

(2) Grasp the chip part with tweezers and place it on the solder.

(3) First solder lead **A** as indicated in the figure.



(4) Then solder leads **B** and **C**.



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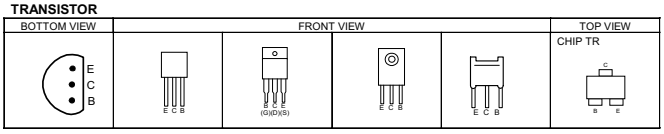
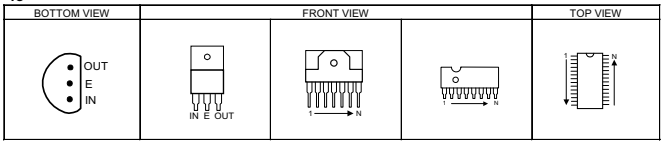
SEMICONDUCTOR SHAPES

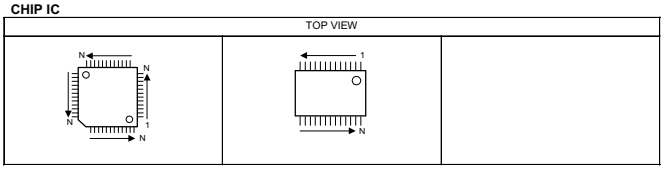
TRANSISTOR



IC



CHIP IC



STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the⚠ symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1)Input signal : Color bar signal
(2)Setting positions of each knob/button and variable resistor :Original setting position when shipped
(3)Internal resistance of tester :DC 20kΩ/V
(4)Oscilloscope sweeping time :H ⇒ 20μS/div
:V ⇒ 5mS/div
:Others ⇒ Sweeping time is specified
(5)Voltage values :All DC voltage values

∗ Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL [EXAMPLE]

●In the PW board :R1209→R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

●Resistance value
No unit :[Ω]
K :[KΩ]
M :[MΩ]

●Rated allowable power
No indication :1/16 [W]
Others :As specified

●Type
No indication :Carbon resistor
OMR :Oxide metal film resistor
MFR :Metal film resistor
MPR :Metal plate resistor
UNFR :Uninflammable resistor
FR :Fusible resistor

*Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

●Capacitance value
1 or higher :[pF]
less than 1 :[μF]

●Withstand voltage
No indication :DC50[V]
Others :DC withstand voltage [V]
AC indicated :AC withstand voltage [V]

*Electrolytic Capacitors
47/50[Example]:Capacitance value [μF]/withstand voltage[V]

●Type
No indication :Ceramic capacitor
MY :Mylar capacitor
MM :Metalized mylar capacitor
PP :Polypropylene capacitor
MPP :Metalized polypropylene capacitor
MF :Metalized film capacitor
TF :Thin film capacitor
BP :Bipolar electrolytic capacitor
TAN :Tantalum capacitor

(3)Coils
No unit :[μH]
Others :As specified

(4)Power Supply

*Respective voltage values are indicated

(5)Test point

:Test point :Only test point display

(6)Connecting method

:Connector :Wrapping or soldering
:Receptacle

(7)Ground symbol

:LIVE side ground
:ISOLATED(NEUTRAL) side ground
:EARTH ground
:DIGITAL ground

5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⏚) side GND. Therefore, care must be taken for the following points.

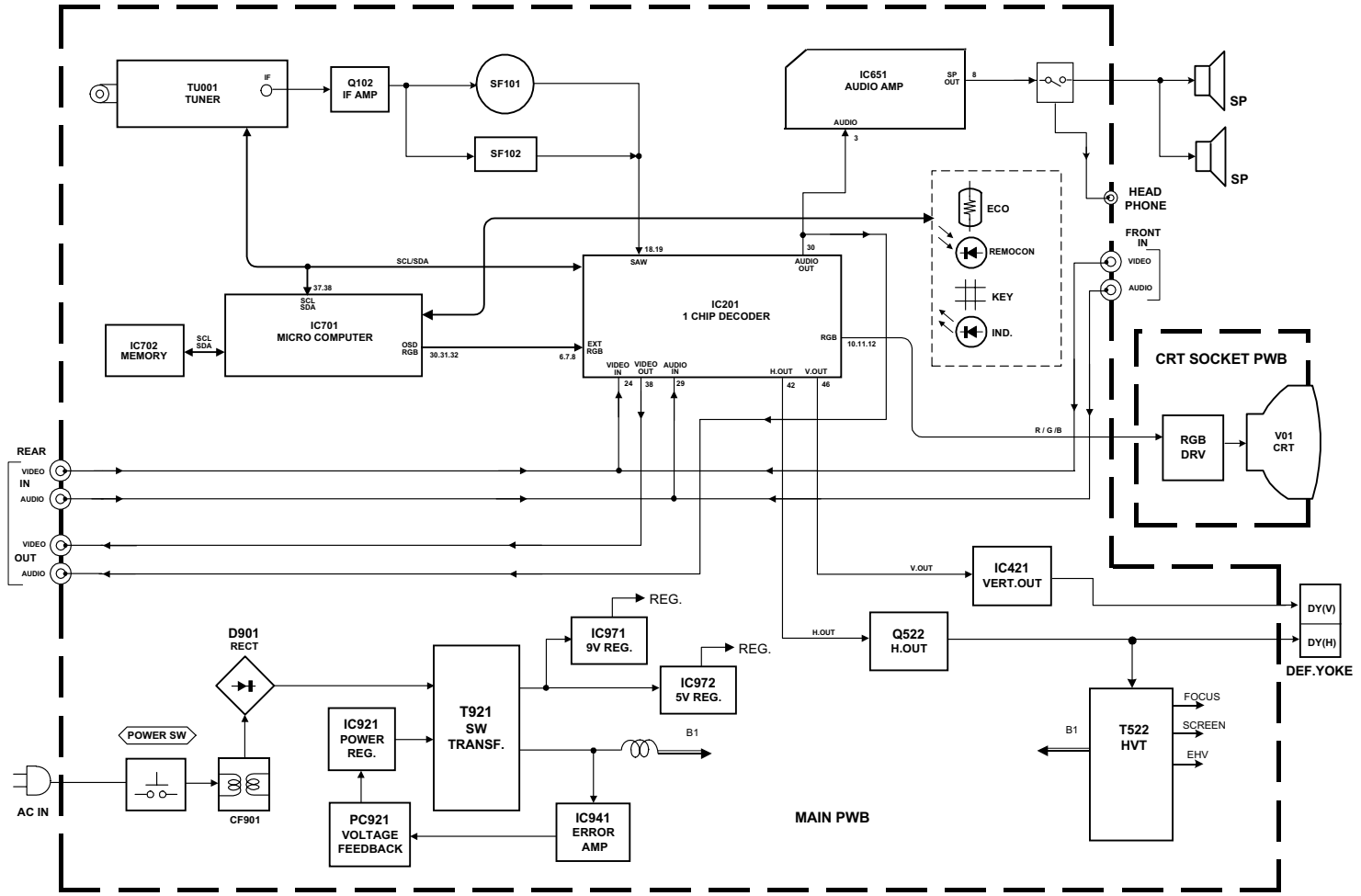
(1)Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.
(2)Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected , a fuse or any parts will be broken.

◇ **Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.**

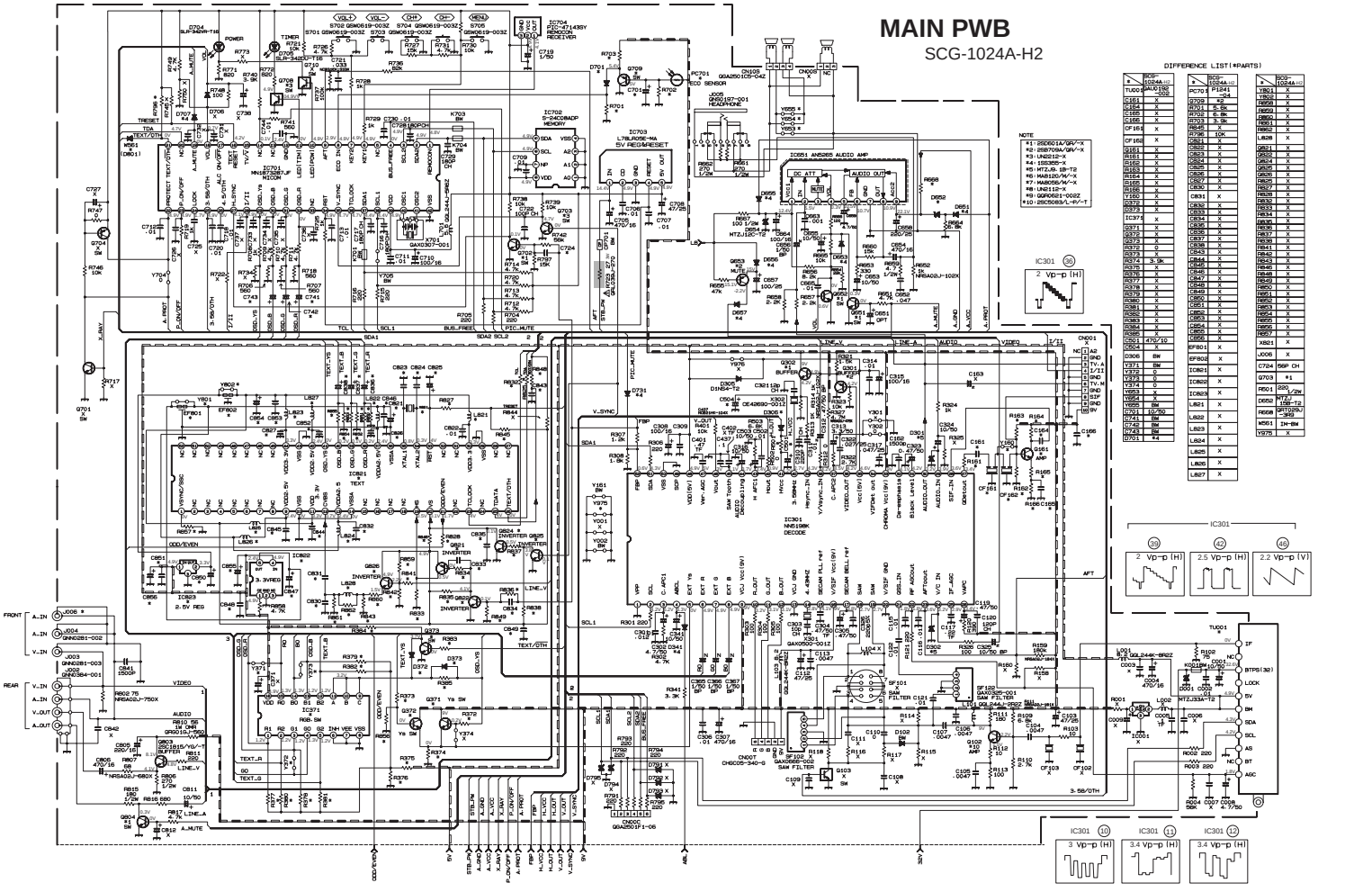
◇ **NOTE**

Due improvement in performance, some part numbers show in the circuit diagram may not agree with those indicated in the part list.
When ordering parts, please use the numbers that appear in the Parts List.

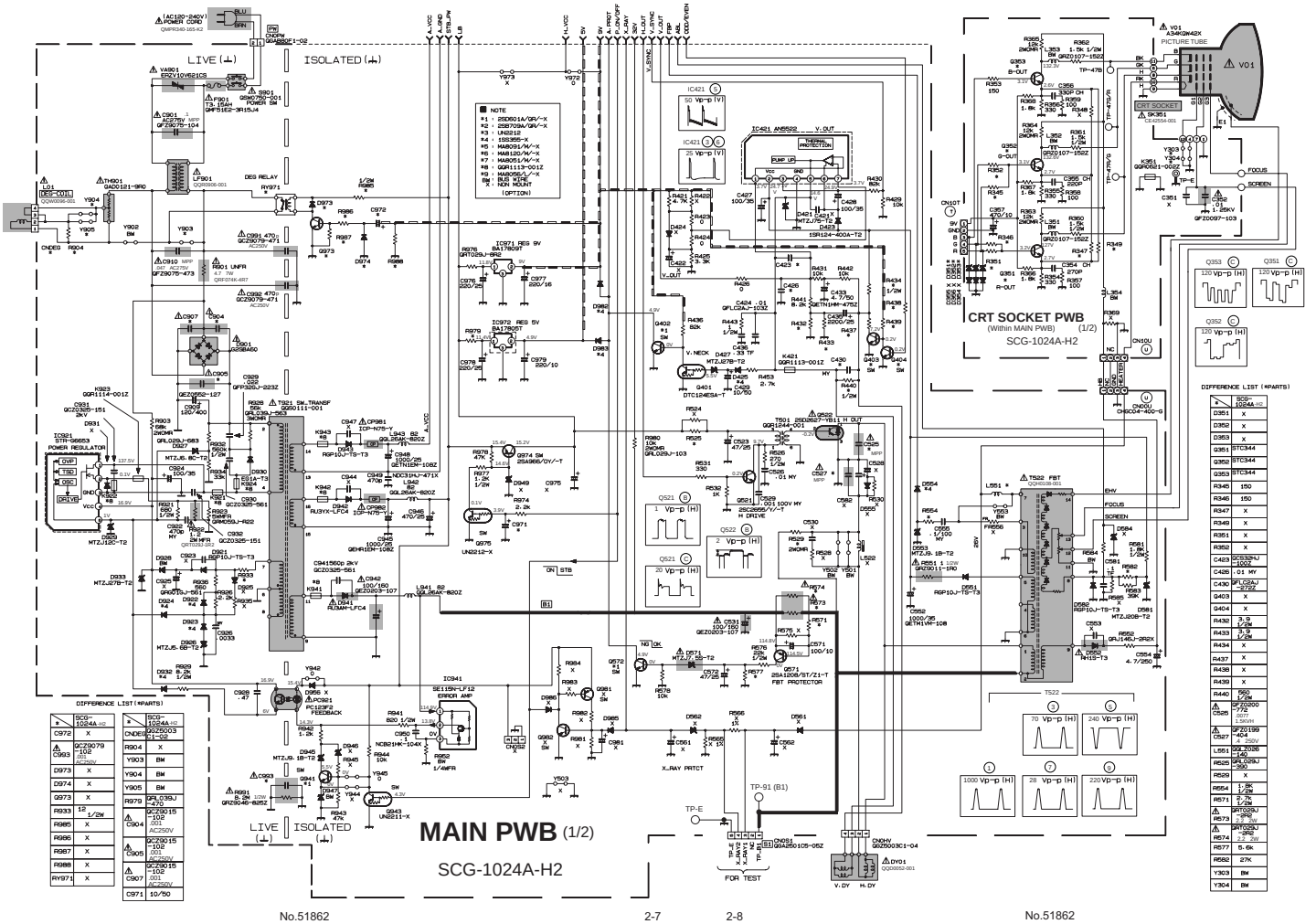
BLOCK DIAGRAM



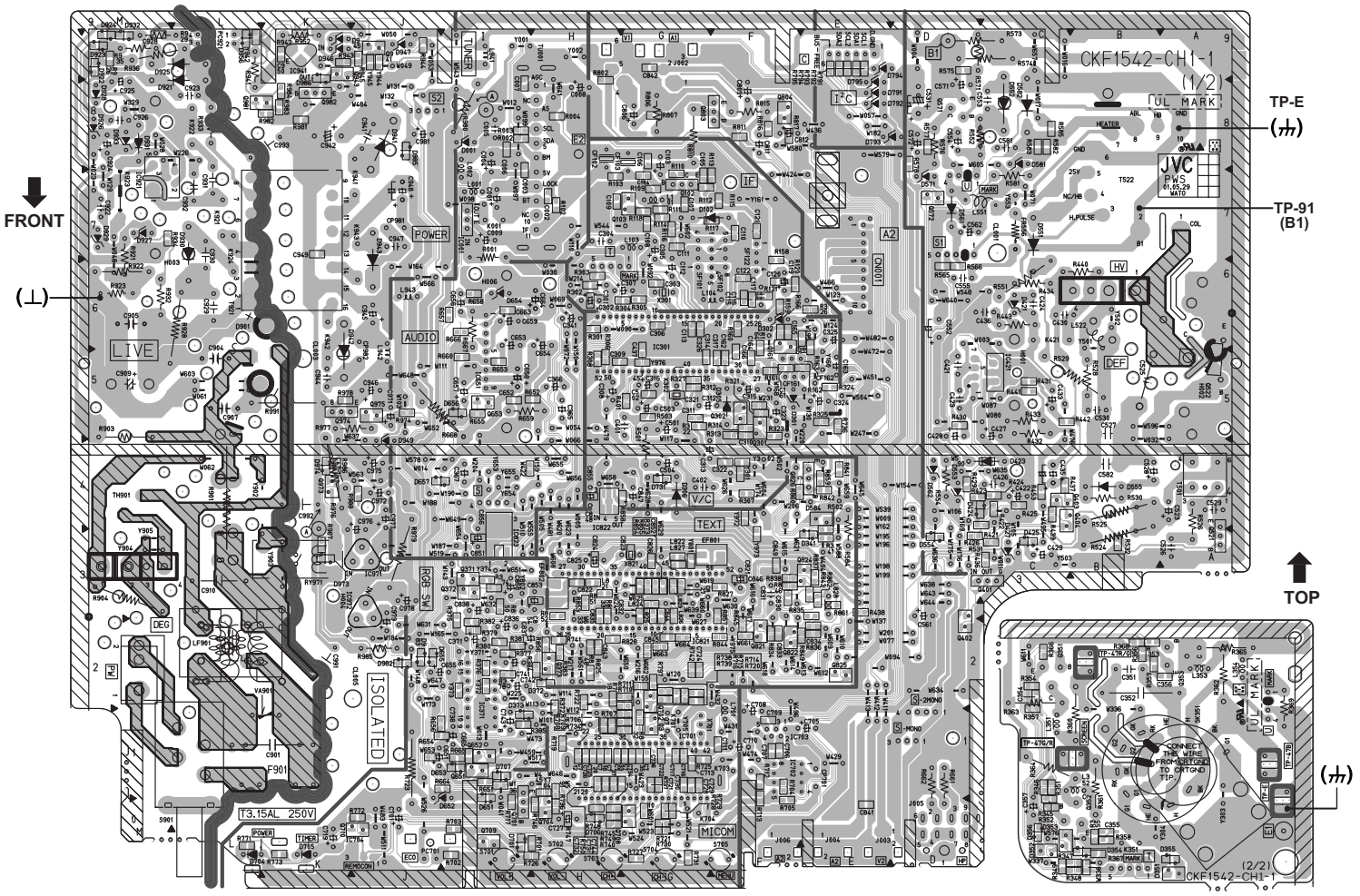
CIRCUIT DIAGRAMS *MAIN PWB CIRCUIT DIAGRAMS* [1/2]



MAIN PWB CIRCUIT DIAGRAM [2/2]



PATTERN DIAGRAMS *MAIN & CRT SOCKET PWB PATTERN*



No.51862 2-9 2-10 No.51862

VP0109
DP6051

PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety. Whenever replacing these parts, be sure to use specified ones to secure the safety .
- The parts not indicated in this Parts List and those which are filled with lines —— in the Parts No. columns will not be supplied.
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

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■ EXPLODED VIEW ····· 32, 33

■ PRINTED WIRING BOARD PARTS LIST

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■ PACKING ····· 37

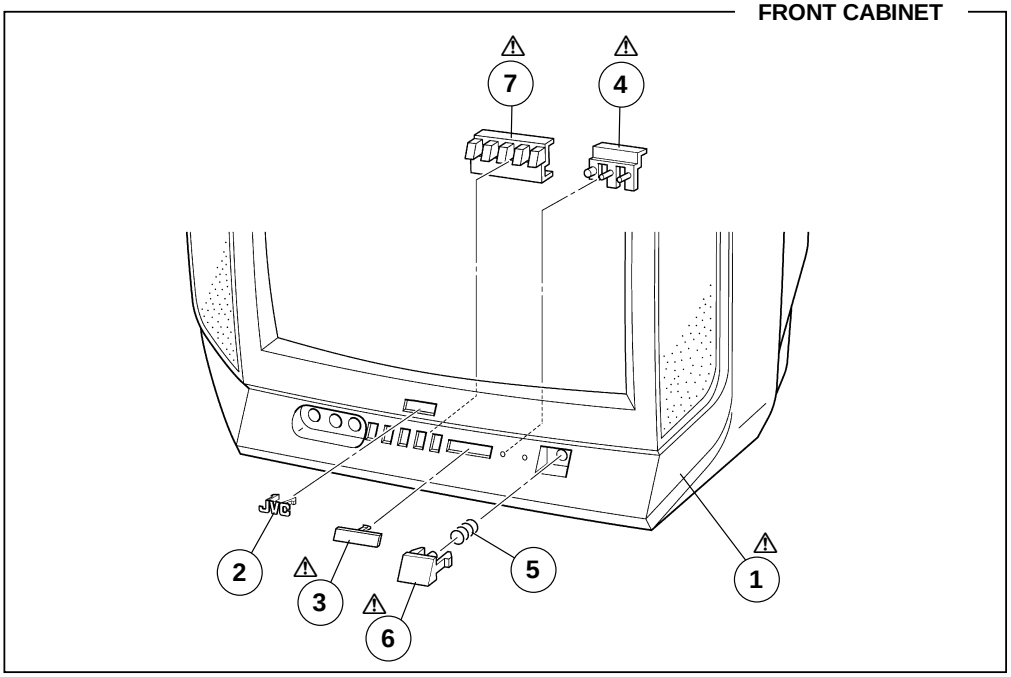
■ PACKING PARTS LIST ····· 37

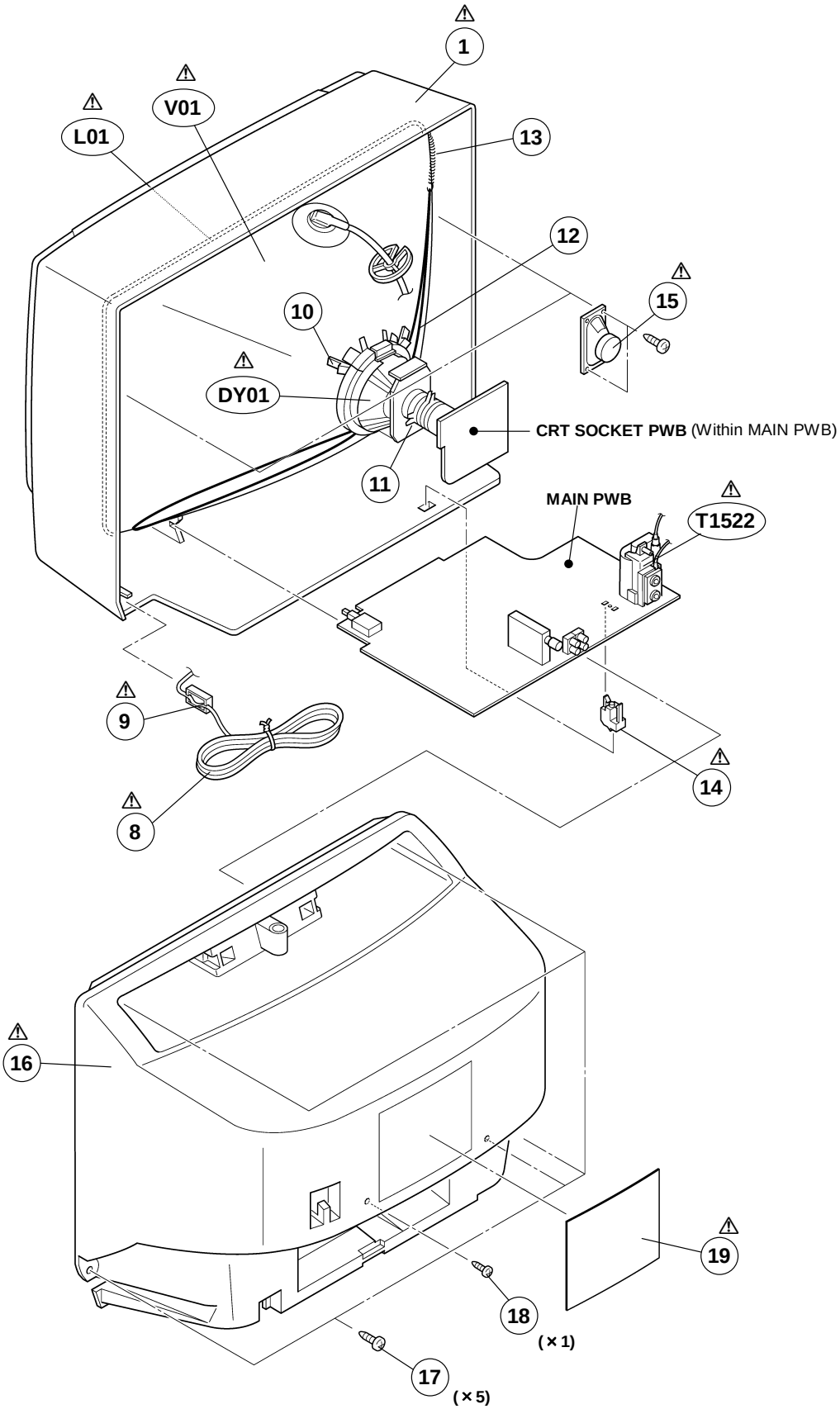
■ REMOTE CONTROL UNIT PARTS LIST ····· 37

EXPLODED VIEW PARTS LIST

⚠	Ref.No.	Part No.	Part Name	Description
⚠	V01	A34KQW42X	PICTURE TUBE(C)	
⚠	L01	QQW0096-001	DEG.COIL	
⚠	DY01	QQD0052-001	DEF YOKE	
⚠	T1522	QQH0108-001	FBT	
⚠	1	LC10831-012A-H	FRONT CABINET	
	2	CM46880-002-H	JVC MARK	
⚠	3	LC30617-001C-H	E.E. WINDOW	
⚠	4	LC30618-001B-H	L.E.D.LENS	
	5	CM35235-003-H	SPRING	
⚠	6	LC30616-004A-H	POWER KNOB	
⚠	7	LC20292-004A-H	CONTROL KNOB	
⚠	8	QMPR340-165-K2	POWER CORD	
⚠	9	CM47005-A01-H	POWER CORD CLAMP	
	10	CE42153-00AJ1	WEDGE ASSY	(×3)
	11	CE40305-00B	P.C.MAGNET	
	12	CHGB0016-0A	BRAIDED WIRE	
	13	A48457-3-H	SPRING	
⚠	14	CM48144-002-H	PWB STOPPER	
⚠	15	QAS0054-001	SPEAKER	(×2) SP01
⚠	16	CM12961-D01-VH	REAR COVER	
	17	QYSBSFG4016Z	TAPPING SCREW	(×5)
	18	QYSBSF3010Z	TAPPING SCREW	(×1)
⚠	19	LC20377-001B-H	RATING LABEL	

EXPLODED VIEW




1
V01
L01
13
12
15
10
DY01
CRT SOCKET PWB (Within MAIN PWB)
11
MAIN PWB
T1522
9
8
14
16
19
18
(× 1)
17
(× 5)

PRINTED WIRING BOARD PARTS LIST

MAIN P.W. BOARD ASS'Y (SCG-1024A-H2)

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R1002-03	NRSA63J-221X	MG R	220Ω 1/16W J
	R1004	NRSA63J-563X	MG R	56kΩ 1/16W J
	R1102	NRSA63J-750X	MG R	75Ω 1/16W J
	R1103	NRSA63J-100X	MG R	10Ω 1/16W J
	R1109	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R1110	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R1111	NRSA02J-181X	MG R	180Ω 1/10W J
	R1112	NRSA63J-100X	MG R	10Ω 1/16W J
	R1113	NRSA63J-101X	MG R	100Ω 1/16W J
	R1120	NRSA63J-391X	MG R	390Ω 1/16W J
	R1121	NRSA63J-221X	MG R	220Ω 1/16W J
	R1159	NRSA02J-184X	MG R	180kΩ 1/10W J
	R1301	NRSA63J-221X	MG R	220Ω 1/16W J
	R1302	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1303-05	NRSA63J-101X	MG R	100Ω 1/16W J
	R1306	NRSA63J-221X	MG R	220Ω 1/16W J
	R1307	NRSA63J-122X	MG R	1.2kΩ 1/16W J
	R1308	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R1312	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R1313	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1314	NRSA02J-102X	MG R	1kΩ 1/10W J
	R1321	NRSA63J-152X	MG R	1.5kΩ 1/16W J
	R1322	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R1323	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1324	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1326	NRSA63J-101X	MG R	100Ω 1/16W J
	R1327	NRSA02J-475X	MG R	4.7MΩ 1/10W J
	R1341	NRSA63J-332X	MG R	3.3kΩ 1/16W J
	R1345-46	NRSA63J-151X	MG R	150Ω 1/16W J
	R1353	NRSA63J-151X	MG R	150Ω 1/16W J
	R1354-56	NRSA63J-331X	MG R	330Ω 1/16W J
	R1357-59	NRSA63J-101X	MG R	100Ω 1/16W J
	R1360-62	QRZ0107-152Z	C R	1.5kΩ 1/2W K
	R1363-65	QRL029J-123	OM R	12kΩ 2W J
	R1366-68	NRSA63J-182X	MG R	1.8kΩ 1/16W J
	R1372	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R1374	NRSA63J-392X	MG R	3.9kΩ 1/16W J
	R1401	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1421-22	NRSA63J-122X	MG R	1.2kΩ 1/16W J
	R1423	NRSA63J-331X	MG R	330Ω 1/16W J
	R1424	NRSA63J-101X	MG R	100Ω 1/16W J
	R1425	NRSA63J-471X	MG R	470Ω 1/16W J
	R1426	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R1429	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1430	NRSA63J-823X	MG R	82kΩ 1/16W J
	R1431	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1432-33	QRE121J-3R9Y	C R	3.9Ω 1/2W J
	R1436	NRSA63J-823X	MG R	82kΩ 1/16W J
	R1440	QRE121J-561Y	C R	560Ω 1/2W J
	R1441	NRSA63J-822X	MG R	8.2kΩ 1/16W J
	R1442	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1443	QRE121J-1R0Y	C R	1.0Ω 1/2W J
	R1453	NRSA63J-272X	MG R	2.7kΩ 1/16W J
	R1501	QRE121J-221Y	C R	220Ω 1/2W J
	R1502	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R1503	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R1525	QRL029J-390	OM R	39Ω 2W J
	R1526	QRE121J-271Y	C R	270Ω 1/2W J
	R1531	NRSA63J-331X	MG R	330Ω 1/16W J
	R1532	NRSA63J-102X	MG R	1kΩ 1/16W J
⚠	R1551	QRZ9011-1R0	F R	1.0 Ω 1/2W J
	R1552	QRJ146J-2R2X	C R	2.2Ω 1/4W J
	R1554	QRE121J-182Y	C R	1.8kΩ 1/2W J
	R1571	QRE121J-272Y	C R	2.7kΩ 1/2W J
⚠	R1573	QRT029J-2R2	MF R	2.2Ω 2W J
⚠	R1574	QRT029J-2R2	MF R	2.2Ω 2W J
	R1576	QRE121J-223Y	C R	22kΩ 1/2W J
	R1577	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1578	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1581	QRE121J-182Y	C R	1.8kΩ 1/2W J

⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R1582	NRSA63J-273X	MG R	27kΩ 1/16W J
	R1583	NRSA63J-393X	MG R	39kΩ 1/16W J
	R1651	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1652	NRSA02J-102X	MG R	1kΩ 1/10W J
	R1653	NRSA63J-331X	MG R	330Ω 1/16W J
	R1654	NRSA63J-223X	MG R	22kΩ 1/16W J
	R1655	NRSA63J-473X	MG R	47kΩ 1/16W J
	R1656	NRSA63J-822X	MG R	8.2kΩ 1/16W J
	R1657-58	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R1659	QRE121J-4R7Y	C R	4.7Ω 1/2W J
	R1660	NRSA63J-153X	MG R	15kΩ 1/16W J
	R1661-62	QRE121J-271Y	C R	270Ω 1/2W J
	R1664	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R1665	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1666	NRSA63J-101X	MG R	100Ω 1/16W J
	R1667	QRE121J-101Y	C R	100Ω 1/2W J
	R1668	QRT029J-3R9	MF R	3.9Ω 2W J
	R1701	NRSA63J-562X	MG R	5.6kΩ 1/16W J
	R1702	NRSA63J-682X	MG R	6.8kΩ 1/16W J
	R1703	NRSA63J-392X	MG R	3.9kΩ 1/16W J
	R1704-05	NRSA63J-221X	MG R	220Ω 1/16W J
	R1706-07	NRSA63J-561X	MG R	560Ω 1/16W J
	R1708	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1709-14	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1715-16	NRSA63J-221X	MG R	220Ω 1/16W J
	R1718	NRSA63J-561X	MG R	560Ω 1/16W J
	R1719	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1720	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1721	NRSA63J-103X	MG R	10kΩ 1/16W J
⚠	R1723	QRL039J-270	OM R	27Ω 3W J
	R1725	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1726	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1727	NRSA63J-153X	MG R	15kΩ 1/16W J
	R1728-29	NRSA63J-102X	MG R	1kΩ 1/16W J
	R1730	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1731	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1736	NRSA63J-823X	MG R	82kΩ 1/16W J
	R1737	NRSA63J-104X	MG R	100kΩ 1/16W J
	R1738-39	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1740	NRSA63J-392X	MG R	3.9kΩ 1/16W J
	R1741	NRSA63J-561X	MG R	560Ω 1/16W J
	R1742	NRSA63J-563X	MG R	56kΩ 1/16W J
	R1746	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1747	NRSA63J-0R0X	MG R	0.0Ω 1/16W J
	R1748	NRSA63J-101X	MG R	100Ω 1/16W J
	R1749	NRSA63J-472X	MG R	4.7kΩ 1/16W J
	R1771-72	NRSA63J-821X	MG R	820Ω 1/16W J
	R1791-95	NRSA63J-221X	MG R	220Ω 1/16W J
	R1796	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1797	NRSA63J-153X	MG R	15kΩ 1/16W J
	R1802	NRSA02J-750X	MG R	75Ω 1/10W J
	R1806	QRE121J-271Y	C R	270Ω 1/2W J
	R1807	NRSA63J-680X	MG R	68Ω 1/16W J
	R1810	QRG01GJ-560	OM R	56Ω 1W J
	R1811	NRSA63J-221X	MG R	220Ω 1/16W J
	R1815	QRE121J-181Y	C R	180Ω 1/2W J
	R1816	NRSA63J-681X	MG R	680Ω 1/16W J
	R1817	NRSA63J-472X	MG R	4.7kΩ 1/16W J
⚠	R1901	QRF074K-4R7	UNF R	4.7Ω 7W K
	R1903	QRL029J-683	OM R	68kΩ 2W J
	R1921	QRE121J-681Y	C R	680Ω 1/2W J
⚠	R1922	QRT029J-1R2	MF R	1.2Ω 2W J
	R1923	QRM059J-R22	MP R	0.22Ω 5W J
	R1926	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R1928	QRL039J-563	OM R	56kΩ 3W J
	R1929	QRE121J-822Y	C R	8.2kΩ 1/2W J
	R1932	QRE121J-564Y	C R	560kΩ 1/2W J
	R1933	QRE121J-120Y	C R	12Ω 1/2W J
	R1934	NRSA63J-333X	MG R	33kΩ 1/16W J
	R1936	QRG01GJ-561	OM R	560Ω 1W J

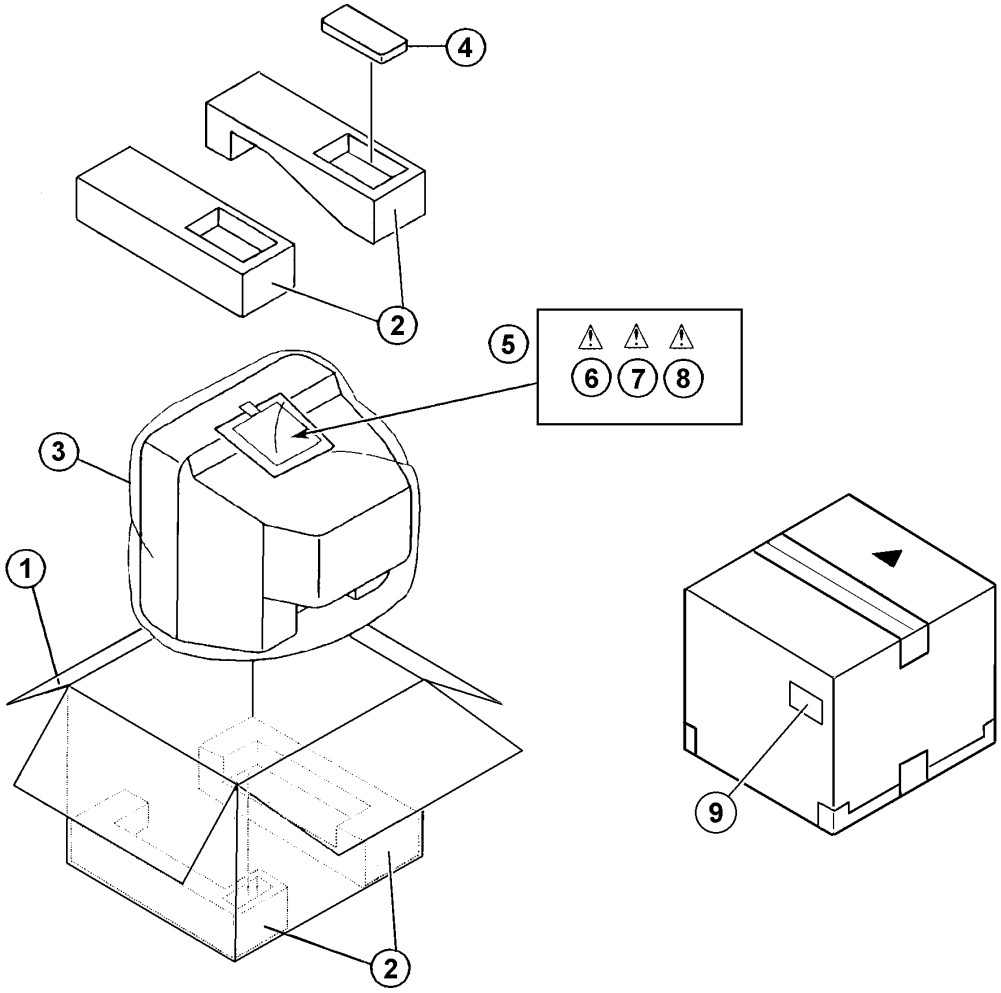
⚠	Symbol No.	Part No.	Part Name	Description
	RESISTOR			
	R1941	QRE121J-821Y	C R	820Ω 1/2W J
	R1942	NRSA63J-122X	MG R	1.2kΩ 1/16W J
	R1943	NRSA63J-473X	MG R	47kΩ 1/16W J
	R1944	NRSA63J-103X	MG R	10kΩ 1/16W J
	R1974	NRSA63J-222X	MG R	2.2kΩ 1/16W J
	R1976	QRL029J-220	OM R	22Ω 2W J
	R1977	QRE121J-122Y	C R	1.2kΩ 1/2W J
	R1978	NRSA63J-473X	MG R	47kΩ 1/16W J
	R1979	QRL039J-470	OM R	47Ω 3W J
	R1980	QRL029J-103	OM R	10kΩ 2W J
⚠	R1991	QRZ9046-825Z	C R	8.2MΩ 1/2W K
	CAPACITOR			
	C1001	QETN1HM-106Z	E CAP.	10µF 50V M
	C1002	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1004	QETN1CM-477Z	E CAP.	470µF 16V M
	C1005	QFV71HJ-104Z	MF CAP.	0.1µF 50V J
	C1008	QETN1HM-475Z	E CAP.	4.7µF 50V M
	C1103	QETN1EM-476Z	E CAP.	47µF 25V M
	C1104-07	NCB31HK-472X	C CAP.	4700pF 50V K
	C1110	NRSA63J-0ROX	MG R	0.0Ω 1/16W J
	C1112	QETN1EM-476Z	E CAP.	47µF 25V M
	C1113	NCB31HK-472X	C CAP.	4700pF 50V K
	C1115-16	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1117	QFV71HJ-224Z	MF CAP.	0.22µF 50V J
	C1119	QETN1HM-474Z	E CAP.	0.47µF 50V M
	C1120	NDC31HJ-121X	C CAP.	120pF 50V J
	C1121-22	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1162	NCB31HK-152X	CHIP CAP.	1500pF 50V K
	C1301	NCB31HK-123X	CHIP CAP.	0.012µF 50V K
	C1302	QETN1HM-475Z	E CAP.	4.7µF 50V M
	C1303	NDC31HJ-100X	C CAP.	10pF 50V J
	C1304	QFV71HJ-474Z	MF CAP.	0.47µF 50V J
	C1305	QETN1HM-474Z	E CAP.	0.47µF 50V M
	C1306	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1307	QETN1CM-477Z	E CAP.	470µF 16V M
	C1308	QETN1CM-107Z	E CAP.	100µF 16V M
	C1309	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1310	NDC31HJ-221X	C CAP.	220pF 50V J
	C1311	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1312	QENC1HM-474Z	BP E CAP.	0.47µF 50V M
	C1313	QETN1HM-335Z	E CAP.	3.3µF 50V M
	C1314	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1315	QETN1CM-107Z	E CAP.	100µF 16V M
	C1316	QETN1HM-106Z	E CAP.	10µF 50V M
	C1317	NCB31EK-473X	CHIP CAP.	0.047µF 25V K
	C1321	NDC31HJ-120X	C CAP.	12pF 50V J
	C1322	NCB31EK-273X	CHIP CAP.	0.027µF 25V K
	C1323	QETN1HM-474Z	E CAP.	0.47µF 50V M
	C1324	QETN1HM-106Z	E CAP.	10µF 50V M
	C1325	QENC1HM-106Z	BP E CAP.	10µF 50V M
	C1326	NCS21HJ-221X	C CAP.	220pF 50V J
	C1341	QETN1HM-106Z	E CAP.	10µF 50V M
⚠	C1352	QFZ0097-103	MM CAP.	0.01µF 1250V K
	C1354	NDC31HJ-271X	C CAP.	270pF 50V J
	C1355	NDC31HJ-221X	C CAP.	220pF 50V J
	C1356	NDC31HJ-331X	C CAP.	330pF 50V J
	C1357	QETN1AM-477Z	E CAP.	470µF 10V M
	C1365-67	QENC1HM-105Z	BP E CAP.	1µF 50V M
	C1401	QFV71HJ-474Z	MF CAP.	0.47µF 50V J
	C1422	QETN1HM-105Z	E CAP.	1µF 50V M
	C1423	QCS32HJ-100Z	C CAP.	10pF 500V J
	C1424	QFLC2AJ-103Z	M CAP.	0.01µF 100V J
	C1426	QFLC1HJ-103Z	M CAP.	0.01µF 50V J
	C1427-28	QETN1VM-107Z	E CAP.	100µF 35V M
	C1429	QETN1HM-106Z	E CAP.	10µF 50V M
	C1430	QFN32AJ-272Z	M CAP.	2700pF 100V J
	C1433	QETN1HM-475Z	E CAP.	4.7µF 50V M
	C1435	QETM1EM-228	E CAP.	2200µF 25V M
	C1436	QFV71HJ-334Z	MF CAP.	0.33µF 50V J
	C1437	NCB21HK-104X	CHIP CAP.	0.1µF 50V K

⚠	Symbol No.	Part No.	Part Name	Description
	CAPACITOR			
	C1501	QETN1EM-107Z	E CAP.	100µF 25V M
	C1502	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1503	QETN1HM-106Z	E CAP.	10µF 50V M
	C1523	QETN1EM-476Z	E CAP.	47µF 25V M
⚠	C1525	QFZ0200-772	MPP CAP.	7700pF1.5kVH±3%
	C1526	QFLC1HJ-103Z	M CAP.	0.01µF 50V J
⚠	C1527	QFZ0199-404	MPP CAP.	0.4µF 250V J
	C1529	QFN32AJ-102Z	M CAP.	1000pF 100V J
⚠	C1531	QEZ0203-107	E CAP.	100µF 160V M
	C1552	QETM1VM-108	E CAP.	1000µF 35V M
	C1554	QETN2EM-475Z	E CAP.	4.7µF 250V M
	C1555	QFLC2AJ-104Z	M CAP.	0.1µF 100V J
	C1571	QETN1AM-107Z	E CAP.	100µF 10V M
	C1572	QETN1EM-476Z	E CAP.	47µF 25V M
	C1581	QFV71HJ-104Z	MF CAP.	0.1µF 50V J
	C1652	NCB31HK-473X	CHIP CAP.	0.047µF 50V K
	C1653	QETN1HM-106Z	E CAP.	10µF 50V M
	C1654	QETN1CM-477Z	E CAP.	470µF 16V M
	C1655	QETN1HM-106Z	E CAP.	10µF 50V M
	C1656	QENC1HM-105Z	BP E CAP.	1µF 50V M
	C1657	QETN1EM-107Z	E CAP.	100µF 25V M
	C1658	QETN1EM-227Z	E CAP.	220µF 25V M
	C1659	QETN1HM-475Z	E CAP.	4.7µF 50V M
	C1663	NCB31HK-102X	C CAP.	1000pF 50V K
	C1664	QETN1CM-107Z	E CAP.	100µF 16V M
	C1665	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1701	QETN1HM-106Z	E CAP.	10µF 50V M
	C1705	QETN1CM-477Z	E CAP.	470µF 16V M
	C1706	NCB21EK-104X	C CAP.	0.1µF 25V K
	C1707	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1708	QETN1EM-476Z	E CAP.	47µF 25V M
	C1709	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1710	QETN1CM-107Z	E CAP.	100µF 16V M
	C1711-13	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1716-17	NDC31HJ-181X	C CAP.	180pF 50V J
	C1718	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1719	QETN1HM-105Z	E CAP.	1µF 50V M
	C1720	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1721	NCB31EK-333X	CHIP CAP.	0.033µF 25V K
	C1722	NDC31HJ-101X	C CAP.	100pF 50V J
	C1724	NDC31HJ-560X	C CAP.	56pF 50V J
	C1728-29	NDC31HJ-181X	C CAP.	180pF 50V J
	C1730	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1744	NCB31HK-103X	C CAP.	0.01µF 50V K
	C1805	QETN1CM-227Z	E CAP.	220µF 16V M
	C1806	QETN1CM-477Z	E CAP.	470µF 16V M
	C1811	QETN1HM-106Z	E CAP.	10µF 50V M
	C1841	NCB31HK-152X	CHIP CAP.	1500pF 50V K
⚠	C1901	QFZ9075-104	MPP CAP.	0.1µFAC275V M
⚠	C1904	QCZ9015-102	C CAP.	1000pFAC250V Z
⚠	C1905	QCZ9015-102	C CAP.	1000pFAC250V Z
⚠	C1907	QCZ9015-102	C CAP.	1000pFAC250V Z
	C1909	QEZ0552-127	E CAP.	170µF
⚠	C1910	QFZ9075-473	MPP CAP.	0.047µFAC275V M
	C1922	QFLC1HJ-471Z	M CAP.	470pF 50V J
	C1924	QETN1VM-107Z	E CAP.	100µF 35V M
	C1926	QFLC1HJ-332Z	M CAP.	3300pF 50V J
	C1928	NCB21HK-473X	C CAP.	0.047µF 50V K
	C1929	QFP32GJ-223Z	PP CAP.	0.022µF 400V J
	C1930	QCZ0325-561	C CAP.	560pF 2kV K
	C1931-32	QCZ0325-151	C CAP.	150pF 2kV K
	C1941	QCZ0325-561	C CAP.	560pF 2kV K
⚠	C1942	QEZ0203-107	E CAP.	100µF 160V M
	C1945	QEHR1EM-108Z	E CAP.	1000µF 25V M
	C1946	QETN1EM-477Z	E CAP.	470µF 25V M
	C1948	QETN1EM-108Z	E CAP.	1000µF 25V M
	C1949	NDC31HJ-471X	C CAP.	470pF 50V J
	C1950	NCB21HK-104X	CHIP CAP.	0.1µF 50V K
	C1971	QETN1HM-475Z	E CAP.	4.7µF 50V M
	C1976	QETN1EM-227Z	E CAP.	220µF 25V M
	C1977	QETN1CM-227Z	E CAP.	220µF 16V M
	C1978	QETN1EM-227Z	E CAP.	220µF 25V M

⚠	Symbol No.	Part No.	Part Name	Description
	CAPACITOR			
	C1979	QETN1AM-227Z	E CAP.	220µF 10V M
⚠	C1991	QCZ9079-471	C CAP.	470pFAC250V K
⚠	C1992	QCZ9079-471	C CAP.	470pFAC250V K
⚠	C1993	QCZ9079-102	C CAP.	1000pFAC250V M
	TRANSFORMER			
	T1501	QQR1244-001	DRIVE TRANSF.	
⚠	T1522	QQH0108-001	FBT	
⚠	T1921	QQS0111-001	SW TRANSF.	
	COIL			
	L1001	QQL244K-8R2Z	COIL	8.2µH K
	L1101	QQL244J-2R2Z	COIL	2.2µH J
	L1103	QQL244K-8R2Z	COIL	8.2µH K
	L1551	QQLZ026-140	HEATER CHOKE	
	L1701	QQL244J-5R6Z	COIL	5.6µH J
	L1941-43	QQL26AK-820Z	COIL	82µH K
	DIODE			
	D1001	MTZJ33A-T2	ZENER DIODE	
	D1301-02	MTZJ9.1B-T2	ZENER DIODE	
	D1305	D1NS4-T2	SI.DIODE	
	D1341	1SS355-X	SI.DIODE	
	D1421	MTZJ75-T2	ZENER DIODE	
	D1423	1SR124-400A-T2	SI.DIODE	
	D1424-25	1SS355-X	SI.DIODE	
	D1427	MTZJ27B-T2	ZENER DIODE	
	D1551	RGP10J-TS-T3	SI.DIODE	
⚠	D1552	RH1S-T3	SI.DIODE	
	D1553	MTZJ9.1B-T2	ZENER DIODE	
	D1554	1SS355-X	SI.DIODE	
⚠	D1571	MTZJ7.5S-T2	ZENER DIODE	
	D1581	MTZJ20B-T2	ZENER DIODE	
	D1582	RGP10J-TS-T3	SI.DIODE	
	D1651	1SS355-X	SI.DIODE	
	D1652	MTZJ15B-T2	ZENER DIODE	
	D1653	1SS355-X	SI.DIODE	
	D1654	MTZJ12C-T2	ZENER DIODE	
	D1655-57	1SS355-X	SI.DIODE	
	D1701	1SS355-X	SI.DIODE	
	D1704	SLR-342VR-T16	L.E.D.	
	D1705	SLR-342DU-T16	L.E.D.(ORG)	
	D1707	1SS355-X	SI.DIODE	
	D1731	1SS355-X	SI.DIODE	
⚠	D1901	G2SBA60	BRIDGE DIODE	
	D1921	RGP10J-TS-T3	SI.DIODE	
	D1922-24	1SS355-X	SI.DIODE	
	D1926	MTZJ5.6B-T2	ZENER DIODE	
	D1927	MTZJ6.8C-T2	ZENER DIODE	
	D1929	MTZJ12C-T2	ZENER DIODE	
	D1930	EG1A-T3	SI.DIODE	
	D1932	1SS355-X	SI.DIODE	
	D1933	MTZJ27B-T2	ZENER DIODE	
⚠	D1941	RU3AM-LFC4	SI.DIODE	
	D1942	RU3YX-LFC4	SI.DIODE	
	D1943	RGP10J-TS-T3	SI.DIODE	
	D1945	MTZJ9.1B-T2	ZENER DIODE	
	D1982-83	1SS355-X	SI.DIODE	
	TRANSISTOR			
	Q1102	2SC5083/L-P/-T	SI.TRANSISTOR	
	Q1301	2SB709A/QR/-X	SI.TRANSISTOR	
	Q1302	2SD601A/QR/-X	SI.TRANSISTOR	
	Q1351-53	STC344-T	SI.TRANSISTOR	
	Q1401	DTC124ESA-T	DIGI.TRANSISTOR	
	Q1402	2SD601A/QR/-X	SI.TRANSISTOR	
	Q1521	2SC2655/Y/-T	SI.TRANSISTOR	
⚠	Q1522	2SD2627-YB11	POWER TRANSISTOR	H.OUT
	Q1571	2SA1208/ST/Z1-T	SI.TRANSISTOR	
	Q1572	2SD601A/QR/-X	SI.TRANSISTOR	
	Q1651-52	2SD601A/QR/-X	SI.TRANSISTOR	

⚠	Symbol No.	Part No.	Part Name	Description
	TRANSISTOR			
	Q1653	2SB709A/QR/-X	SI.TRANSISTOR	
	Q1702-03	2SD601A/QR/-X	SI.TRANSISTOR	
	Q1708	UN2212-X	DEGI.TRANSISTOR	
	Q1709	2SB709A/QR/-X	SI.TRANSISTOR	
	Q1803	2SC1815/YG/-T	SI.TRANSISTOR	
	Q1804	2SD601A/QR/-X	SI.TRANSISTOR	
	Q1941	2SD601A/QR/-X	SI.TRANSISTOR	
	Q1943	UN2211-X	DIGI TRANSISTOR	
	Q1974	2SA966/OY/-T	SI.TRANSISTOR	
	Q1975	UN2212-X	DEGI.TRANSISTOR	
	IC			
	IC1301	NN5198K	I.C.(M)	
	IC1421	AN5522	I C	
	IC1651	AN5265	I.C.(MONO-ANA)	
	IC1701	MN1873287JF	IC	
	IC1702	AT24C08-21DTT2	I.C.	(SERVICE)
	IC1703	L78LR05E-MA	I.C.(MONO-ANA)	
	IC1704	PIC-47143SY	IR DETECT UNIT	
	IC1921	STR-G6653	I.C.(HYBRID)	
	IC1941	SE115N-LF12	I.C.(HYBRID)	
	IC1971	BA17809T	I.C.(MONO-ANA)	
	IC1972	BA17805T	I.C.(MONO-ANA)	
	OTHERS			
		LC30114-001C-H	L.E.D.HOLDER	
		CM35921-005-H	CDS HOLDER	
⚠	CP1981	ICP-N75-Y	I.C.PROTECT	
⚠	CP1982	ICP-N75-Y	I.C.PROTECT	
⚠	F1901	QMF51E2-3R15J4	FUSE	3.15A
⚠	FC1901	CEMG002-001Z	FUSE CLIP	
	J1002	QNN0384-001	PIN JACK	
	J1003	QNN0281-003	PIN JACK	
	J1004	QNN0281-002	PIN JACK	
	J1005	QNS0197-001	3.5 JACK	
	K1351	QQR0621-002Z	BEADS CORE	
	K1421	QQR1113-001Z	FERRITE BEADS	
	K1921-22	QQR1113-001Z	FERRITE BEADS	
	K1923	QQR1114-001Z	FERRITE BEADS	
	K1924	QQR1113-001Z	FERRITE BEADS	
	K1941-43	QQR1113-001Z	FERRITE BEADS	
⚠	LF1901	QQR0906-001	LINE FILTER	
	PC1701	P1241-04	C.D.S.	
⚠	PC1921	PC123F2	I.C.(PH.COUPLER)	
	S1701	QSW0619-003Z	PUSH SWITCH	VOL+
	S1702	QSW0619-003Z	PUSH SWITCH	VOL-
	S1703	QSW0619-003Z	PUSH SWITCH	CH+
	S1704	QSW0619-003Z	PUSH SWITCH	CH-
	S1705	QSW0619-003Z	PUSH SWITCH	MENU POWER SW
⚠	S1901	QSW0750-001	PUSH SWITCH	
	SF1102	QAX0666-002	SAW FILTER	
	SF1122	QAX0325-001	SAW FILTER	
⚠	SK1351	CE42554-001	C.R.T.SOCKET	
⚠	TH1901	QAD0121-9R0	P.THERISTOR	
	TU1001	QAU0191-002	TUNER	
⚠	VA1901	ERZV10V621CS	VARISTOR	
	X1301	QAX0500-001Z	CRYSTAL	
	X1302	CE42690-001Z	CRYSTAL	
	X1701	QAX0307-001	CER.RESONATOR	

PACKING



PACKING PARTS LIST

⚠	Ref.No.	Part No.	Part Name	Description
	1	LC10845-027A-H	PACKING CASE	
	2	LC10833-002B-H	CUSHION ASSY	4pcs in 1set
	3	CP30967-002-H	POLY BAG	
	4	RM-C364GY-1H	REMOCON UNIT	
	5	CP30966-001-H	POLY BAG	
⚠	6	LCT0994-001B-H	INST BOOK	
⚠	7	LCT0993-001B-H	DIGEST MANUAL	
⚠	8	CM36447-00A-H	ROD ANTENNA	
	9	CM47385-00B-H	POS/SERIAL LABEL	

REMOTE CONTROL UNIT PARTS LIST (RM-C364GY-1H)

⚠	Ref.No.	Part No.	Part Name	Description
		25-1168F	BATTERY COVER	

Memo

Memo

JVC

COLOUR TELEVISION

AV-14A10	***AV-21D10***
AV-14ATG2	***AV-21DM10***
AV-14FTG2	***AV-21DTG2***
AV-20NTG2	***AV-21LT1***
AV-21ATG2	***AV-21LTG1***

INSTRUCTIONS

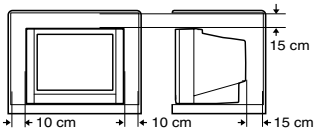
Thank you for purchasing this JVC colour television.
To ensure your complete understanding, please read this manual thoroughly before operation.

Contents

Locations ***2***
Preparation ***3***
Basic operation ***9***
Remote control buttons and functions ***10***
Using the TV's menus ***13***
Using the button on the TV ... ***16***
Troubleshooting ***18***
Specifications ***19***

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION:
- TO ENSURE PERSONAL SAFETY, OBSERVE THE FOLLOWING RULES REGARDING THE USE OF THIS TV.
- Operate only from the power source specified on the TV.
- Avoid damaging the power plug and power cord.
- Avoid improper installation and never position this TV where good ventilation is unattainable. When installing this TV distance recommendations must be maintained between the floor and wall, as well as installment in a tightly enclosed area or piece of furniture. Adhere to the minimum distance guidelines shown for safe operation.



- Do not allow objects or liquid into the cabinet openings.
- In the event of a fault, unplug this TV and call a service technician. Do not attempt to repair it by yourself or remove the rear cover.
- When you don't use this TV for a long period of time, be sure to disconnect the power plug from the AC outlet.

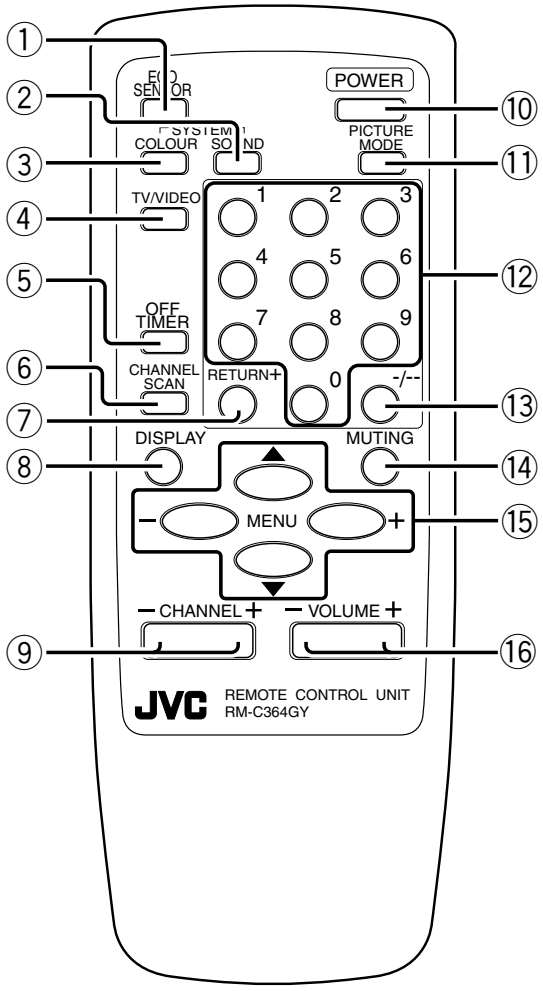
VC
PANY OF JAPAN, LIMITED

AN, LIMITED

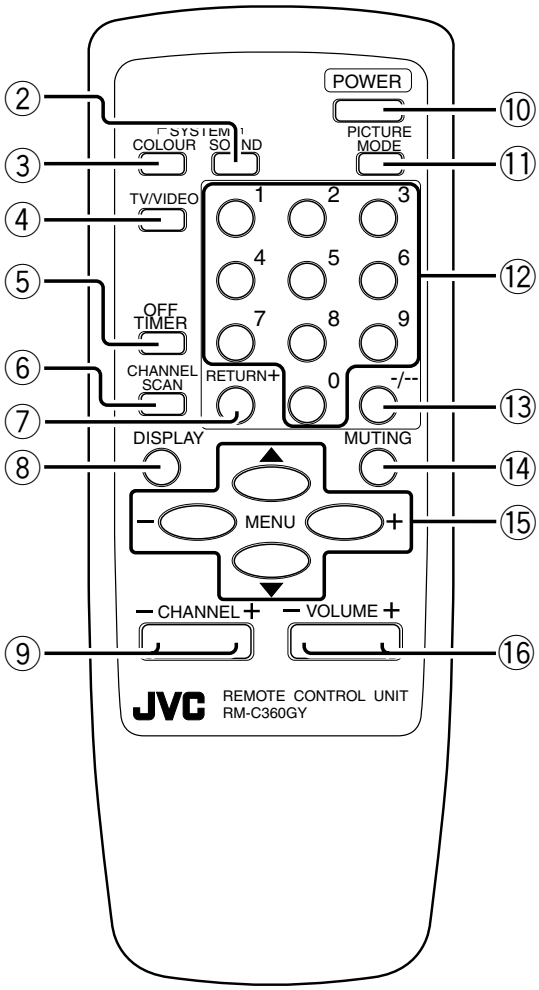
LCT0994-001B-H
0701-Ki-NV-JMT

Locations

RM-C364GY



RM-C360GY



①	ECO SENSOR button	p.11
②	SOUND SYSTEM button	p.10
③	COLOUR SYSTEM button	p.10
④	TV/VIDEO button	p.9
⑤	OFF TIMER button	p.11
⑥	CHANNEL SCAN button	p.12
⑦	RETURN + button	p.12
⑧	DISPLAY button	p.11
⑨	CHANNEL –/+ buttons	p.9
⑩	POWER button	p.5,9
⑪	PICTURE MODE button	p.10
⑫	Number buttons	p.9
⑬	-/-- button	p.9
⑭	MUTING button	p.11
⑮	MENU buttons • MENU ▲/▼ buttons • MENU –/+ buttons	
⑯	VOLUME –/+ buttons	p.9

Preparation

1. Connecting the aerial and external devices

Notes:

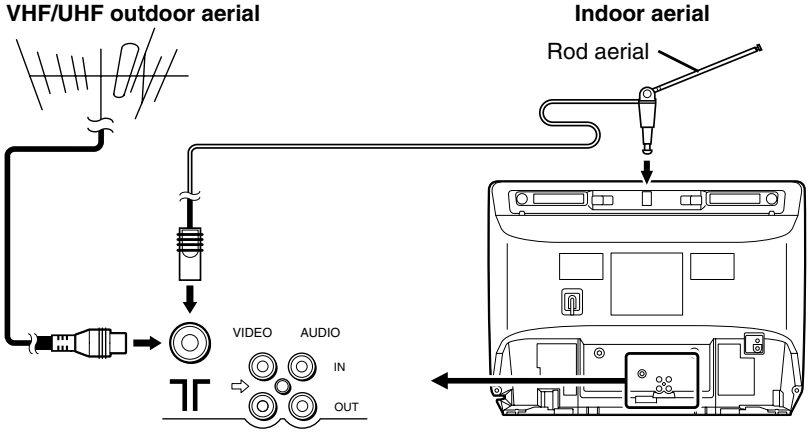
- For further details, refer to the manuals provided with the devices you are connecting.
- Connecting cables are not supplied.
- The front and rear AUDIO/VIDEO input jacks are directly connected so that input to either jack is output through both. You cannot provide input to both the front and rear jacks at the same time. Disconnect one input, or use one of the jacks as an output jack only (for monitoring or recording).
- The rod aerial is supplied with the AV-14A10/AV-14ATG2/AV-14FTG2.

■ Connecting the aerial and VCR

Connecting the aerial

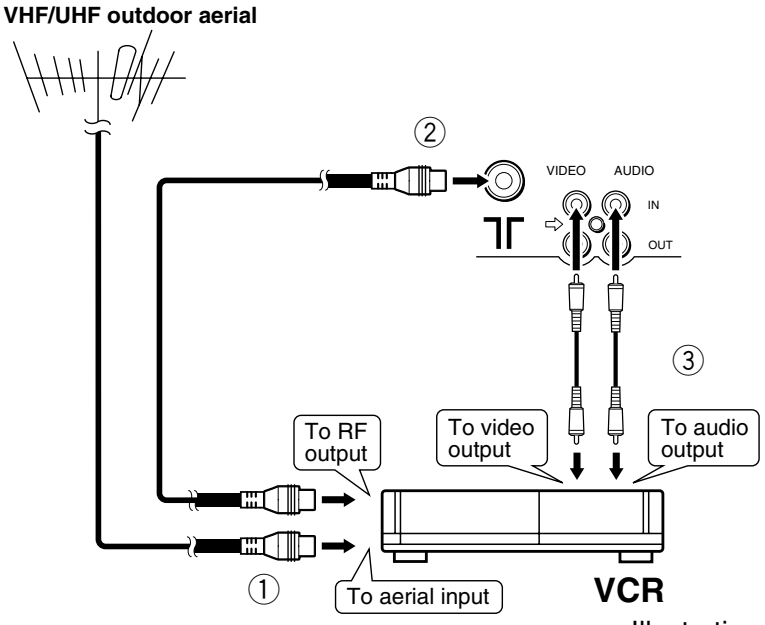
To install rod aerial:

Install into the top-rear aerial holder. Once installed, it cannot be removed.



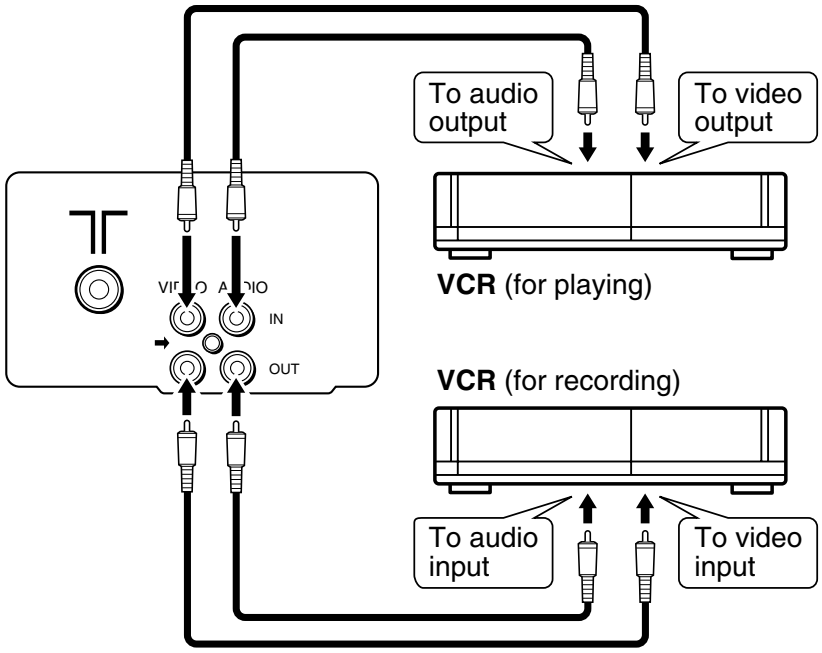
• Illustration of AV-14FTG2.

Connecting the aerial and VCR

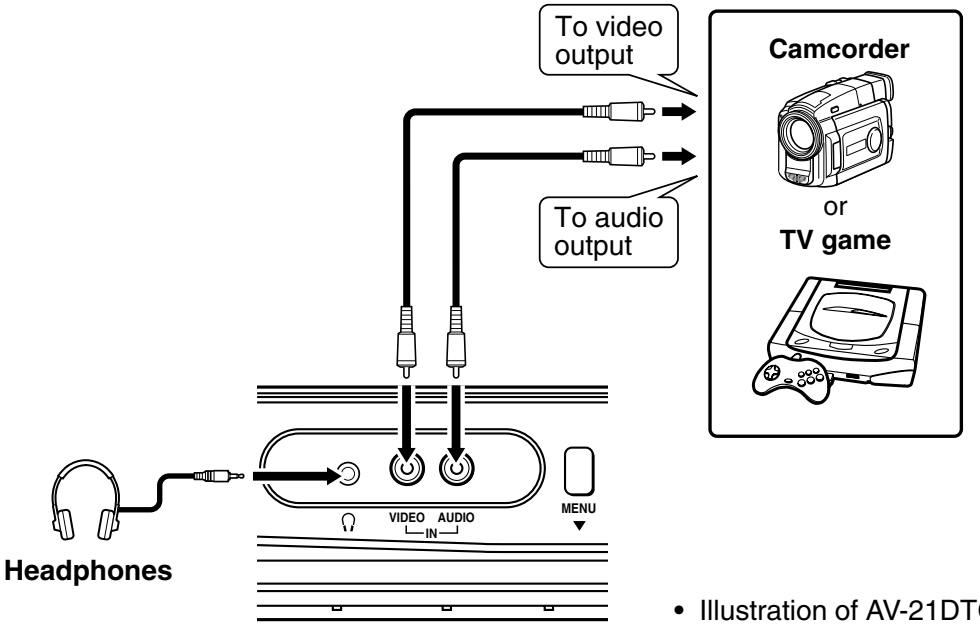


• Illustration of AV-14FTG2.

■ Connecting other external devices



• Illustration of AV-21DTG2.



• Illustration of AV-21DTG2.

Note: .....

• Use the headphones with a stereo mini jack (3.5 mm in diameter). When you connect the headphones, the TV speakers go off.

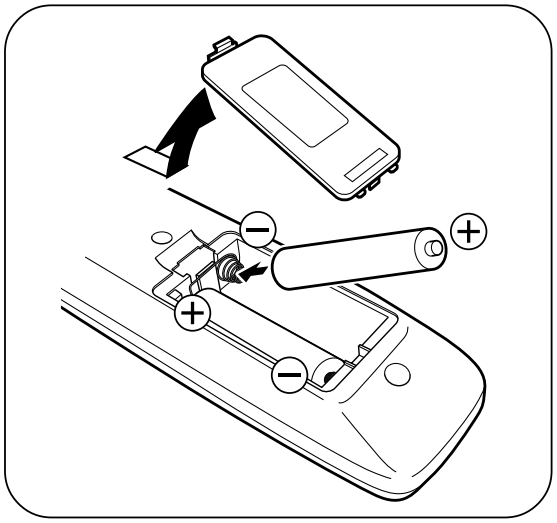
.....

2. Connecting the power cord

Insert the Power plug into an AC outlet.

3. Inserting batteries into the remote control

Correctly insert two batteries, observing the ⊕ and ⊖ polarities and inserting the ⊖ end first.



CAUTION:

- Follow the cautions printed on the batteries.

Notes:

- Use AA/R6/UM-3 dry cell batteries.
- If the remote control does not work properly, fit new batteries.
  The supplied batteries are for testing, not regular use.

4. Turning your TV on

1. Press the Main power button on the TV to turn the TV's main power on.

The POWER lamp or POWER/ON TIMER lamp lights.

If image does not appear:

Your TV is in the standby mode. Press the POWER button on the remote control to turn your TV on.

- You can also turn on your TV by pressing the CHANNEL –/+ button on your TV.

To turn your TV off:

Press the POWER button on the remote control. Your TV enters the standby mode.

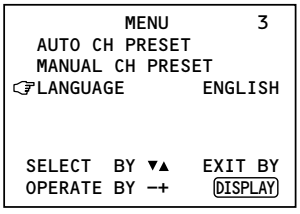
To turn the TV's main power off:

Press the Main power button on the TV.

5. Selecting the on-screen language

You can select the language for the on-screen display.

1. Press MENU ▲/▼ to display the *MENU 3* menu, then select *LANGUAGE*.



2. Press MENU –/+ to select language.
The on-screen displays indications are in the selected language.

6. Presetting TV stations

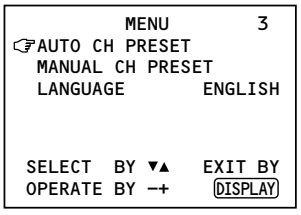
To view a TV programme, you must first preset TV channels to channels on the TV. This TV has 100 channels (channel 1 to 99 and channel AV).

■ Auto Channel Preset

You can automatically preset all TV channels that can be received by your TV to channels.

- The Auto Channel Preset function does not preset a TV channel to the AV channel (channel number 0).
- If the TV cannot preset the TV channel you want to view, preset it manually. For details see "Manual Channel Preset" on page 7.

1. Press MENU ▲/▼ to display the *MENU 3* menu, then select *AUTO CH PRESET*.



2. Press MENU –/+ to start the Auto Channel Preset function.
>>> ON SEARCH is displayed on the screen.

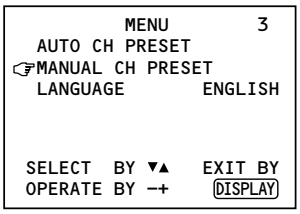
When you have finished presetting all TV channels that can be received on your TV, the display will go out and the Auto Channel Preset function will end.

- To stop the Auto Channel Preset, press the MENU –/+ button.

■ Manual Channel Preset

You can manually preset the desired TV channels to the desired channels.

1. Press MENU ▲/▼ to display the *MENU 3* menu, then select *MANUAL CH PRESET*.

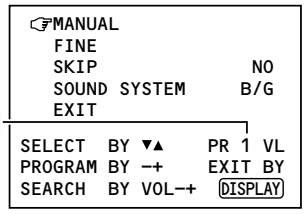


2. Press MENU –/+.

The sub-menu is displayed.

- The channel No. is displayed as a PR No.

3. Press MENU –/+ to select the channel number.



Channel No.

4. Press VOLUME –/+ to start searching for the TV channel.

>>> or <<< is displayed on the screen.

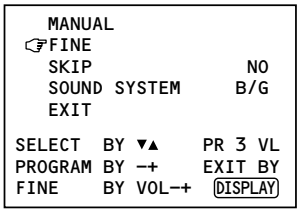
When a TV channel is received, the >>> or <<< display goes out, and the TV station is preset to the currently selected channel No.

- If the TV channel you want to preset is not displayed, repeat step 4 until the TV finds the TV channel you want to preset.
- To stop the Manual Channel Preset function, press any button other than the VOLUME –/+ button.

If the picture is not clear:

Use the Fine function to fine-tune the TV station.

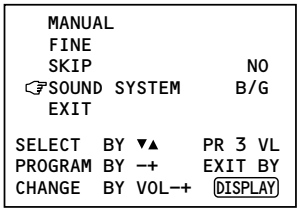
1. **Press MENU ▲/▼ to select *FINE*.**
2. **Hold VOLUME –/+ down to fine-tune the TV station so that the best image is displayed on screen.**
   > or < indicates that the TV station is being fine-tuned.



5. Press MENU ▲/▼ to select *SOUND SYSTEM*.

6. Press VOLUME –/+ to select the appropriate sound system.

- For the sound systems in each country or region, refer to the table “Broadcasting systems”.



7. Press MENU ▲/▼ to select *MANUAL*.

8. Repeat steps 3 to 7 if you want to preset another TV station to a channel.

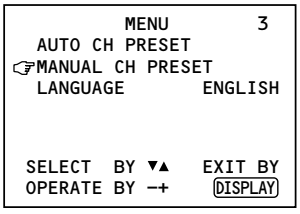
9. Press DISPLAY to turn the display off.

■ Skip

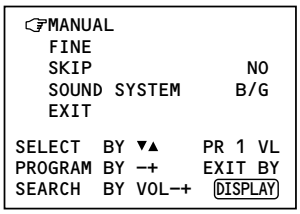
You can set undesired channels to be skipped.
Channels set to be skipped cannot be selected by the CHANNEL –/+ buttons nor the CHANNEL SCAN button.

- Channels to which a station has not been preset are automatically set to be skipped.

1. Press MENU ▲/▼ to select *MANUAL CH PRESET*.

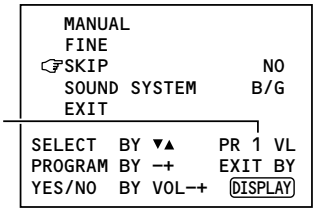


2. Press MENU –/+.
The sub-menu is displayed.



3. Press MENU ▲/▼ to select *SKIP*.
- The channel No. is displayed as a PR No.

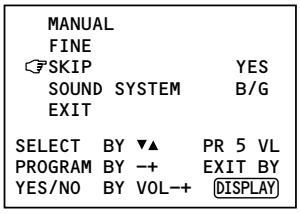
4. Press MENU –/+ to select the channel you want to skip.



Channel No.

5. Press VOLUME –/+ to select *YES*.
The channel you selected is set to be skipped.

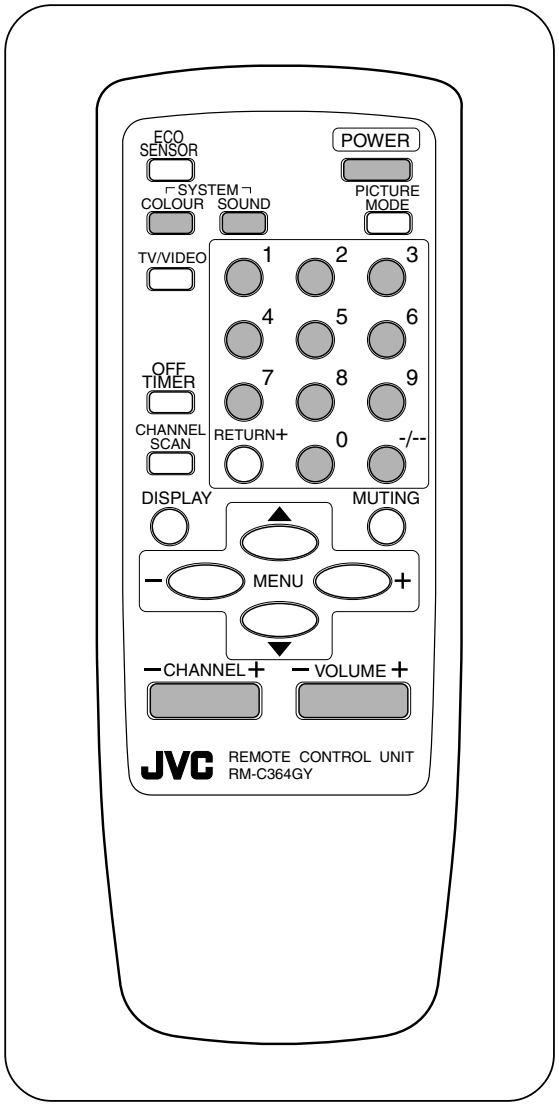
To cancel the Skip:
select ***NO***.



6. Repeat steps 4 and 5 if you want to set another channel to skip.

7. Press DISPLAY to turn the display off.

Basic operation



1. Press the POWER button to turn your TV on.

- If your TV does not turn on, press the Main power button on the TV then press the POWER button again.
- You can also turn on your TV by pressing any of the following buttons;
  – the CHANNEL –/+ button
  – the Number buttons
  – the TV/VIDEO button

2. Select a channel.

■ Press the CHANNEL –/+ button.

- Up/down selection cannot be selected for channels to which the Skip has been set to ***YES***. (See page 8.)

■ Press the Number buttons to enter the channel number.

- If you want to enter a two-digit number, press the -/-- button to select the two digit mode "--", then enter the channel number.

If the colour is abnormal:
Repeatedly press the COLOUR SYSTEM button to select the appropriate colour system. For details, see "Colour System" on page 10.

3. Press VOLUME –/+ to adjust the sound.

If the sound is abnormal:
Repeatedly press the SOUND SYSTEM button to select the appropriate sound system. For details, see "Sound System" on page 10.

4. To turn your TV off, press POWER.

- We recommend that you press the Main power button on the TV to turn the main power off if you do not plan to use your TV for a long time or if you wish to save energy.

Viewing Images from an External Device:
Press the TV/VIDEO button to select the VIDEO mode.

- You can also use the Input function to select the VIDEO mode. For details, refer to page 13.

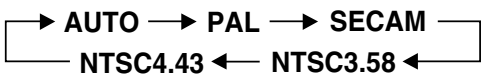
Remote control buttons and functions

Colour System

If the colour is abnormal, select the appropriate colour system. Each press of the COLOUR SYSTEM button changes the colour system as follows.

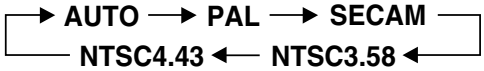
In TV mode (channel 1 to 99 and AV):

<AV-21DM10>



<Others models>

In VIDEO mode:



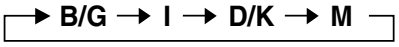
AUTO:
Automatic colour system selection.

- For the colour systems in each country or region, see the table “Broadcasting Systems” on page 19.
- If the colour is abnormal even though you selected ***AUTO***, change the appropriate colour system manually.

Sound System

If the sound is abnormal, select the appropriate sound system. Each press of the SOUND SYSTEM button changes the sound system as follows.

<AV-21DM10>



<Others models>

- For the sound systems in each country or region, see the table “Broadcasting Systems” on page 19.
- You cannot select any sound system when in VIDEO mode.

Picture Mode

You can select one of three picture adjustment modes.
Repeatedly press the PICTURE MODE button to select the desired mode.

BRIGHT:
Heightens contrast and sharpness.

STANDARD:
Standardizes picture adjustments.

SOFT:
Softens contrast and sharpness.

- Pressing the PICTURE MODE button returns all the picture settings in the ***MENU 4*** menu to their default settings.

Display

You can continuously display the current channel number or VIDEO mode on the screen.
Press the DISPLAY button.
To turn the display off, press the DISPLAY button again.

- When selecting a channel or VIDEO mode with no input signal, indication of selected channel or VIDEO mode becomes fixed on the screen.

Off Timer

You can set this TV to turn off automatically within a specified period of time.
Repeatedly press the OFF TIMER button to select the period of time.

- You can set the period of time a maximum of 120 minutes in 10 minute increments.
- 1 minute before the Off Timer turns off the TV, ***GOOD NIGHT!*** displays.

To display the remaining time:

Press the OFF TIMER button once.

To cancel the Off Timer:

Press the OFF TIMER button to return the period of time to 0.

- The Off Timer will not turn off the TV's main power.

Muting

You can turn the volume off instantly. This is convenient when answering the phone or when you have visitors.
Press the MUTING button.
To return the sound, press the MUTING button again.

Eco Sensor

<AV-14A10/AV-14ATG2 does not have this function.>

You can adjust this TV so that the screen automatically adjusts to the optimum contrast according to the brightness of your room. This function reduces eye strain and the power consumption of this TV.
Repeatedly press the ECO SENSOR button to select the desired mode.

- AV-21LT1/AV-21LTG1 does not display "DIGITAL".

DIGITAL ECO SENSOR DISPLAY:

The Eco Sensor function will work. In this mode, the mark indicating the brightness of your room is displayed for several seconds each time the brightness changes. The number of marks displayed on screen increases as your room becomes darker.

DIGITAL ECO SENSOR:

The Eco Sensor function will work. However, in this mode, the mark will not be displayed even if the brightness of your room changes.

DIGITAL ECO SENSOR OFF:

The Eco Sensor function will not work.

Channel Scan

You can search for the channel you want to view while scanning all of the channels that can be viewed on this TV.

1. **Press CHANNEL SCAN.**
   Channels will be scanned in channel No. order.
2. **When the channel that you want to view appears, press CHANNEL SCAN again before scanning for the next channel begins.**

- Channel Scan selection cannot be selected for channels to which the Skip has been set to ***YES***. (See page 8.)

Return +

You can set a channel you frequently view to the Return Channel and you can view that channel at any time with one-touch.

To set the channel to the Return Channel:

1. **Select the channel you want to set to the Return Channel.**
2. **Press RETURN + and hold until the message *RETURN PLUS PROGRAMMED!* appears.**

- When you turn off the TV, the Return Channel setting is cancelled.

To view the Return Channel:

Press the RETURN + button.

- You can view two channels (current channel and Return Channel) alternately by pressing this button.

To cancel the Return Channel setting:

Press the RETURN + button and hold until the message ***RETURN PLUS CANCELLED!*** appears.

If no channel is set to the Return Channel:

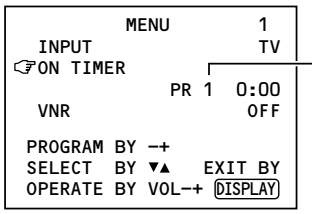
You can view the channel selected right before the current channel by pressing this button.

Using the TV's menus

On Timer

Your TV will automatically turn on and tune into the channel you set after the period of time you set.

1. Press MENU ▲/▼ to display the *MENU 1* menu, then select *ON TIMER*.



2. Press MENU –/+ to select a channel you want to view when the TV turns on.

3. Press VOLUME –/+ to select the period of time after which you want to turn on the TV.
The On Timer function starts.

- Each time you press the button, the period of time changes in 15 minute intervals (up to 12 hours).

To cancel the On Timer function, press the VOLUME –/+ button to set the period of time to ***0:00***.

4. Press DISPLAY to turn the display off.

- If you turn off the TV's main power by pressing the Main power button, the On Timer function is canceled.
- If you do not turn off the TV after starting the On Timer function, the channel will automatically switch to the channel set for the On Timer function.

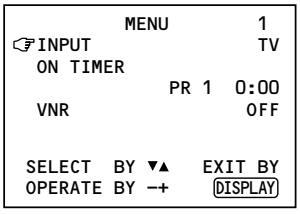
When the time set for the On Timer function is reached:
The TV automatically turns on and the channel set for the On Timer function is displayed.

- For safety reasons the TV will automatically turn off if no operations are made within approximately two hours after the TV is turned on with the On Timer function.
- The Off Timer function and Auto Shutoff function have priority over the On Timer function.

Input

You can view images from VCRs or other devices connected to your TV.

1. Press MENU ▲/▼ to display the *MENU 1* menu, then select *INPUT*.

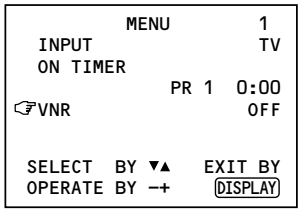


2. Press MENU –/+ to select the VIDEO mode.
TV mode changes to VIDEO mode.

VNR (Video Noise Reduction)

You can reduce the picture noise.

1. Press MENU ▲/▼ to display the *MENU 1* menu, then select *VNR*.



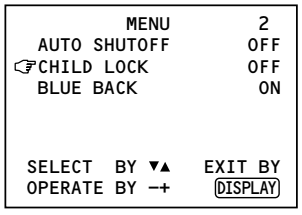
2. Press MENU –/+ to select *ON*.
To cancel the VNR function, select ***OFF***.

3. Press DISPLAY to turn the display off.

Child Lock

You can disable the front control buttons of the TV.
When this function is set to ***ON***, the TV can be operated using only the remote control.
Use this function to prevent children from operating the TV at their own discretion (without parental consent).

1. Press MENU ▲/▼ to display the *MENU 2* menu, then select *CHILD LOCK*.



2. Press MENU –/+ to select *ON*.
To cancel the Child Lock function, select ***OFF***.

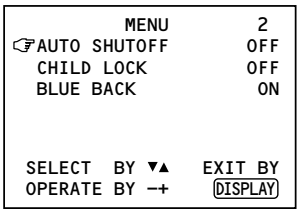
3. Press DISPLAY to turn the display off.

- The Child Lock function is canceled when you turn the TV's main power off.

Auto Shutoff

You can set your TV to turn off if no signals are received for about 15 minutes or longer after the end of a broadcast.

1. Press MENU ▲/▼ to display the *MENU 2* menu, then select *AUTO SHUTOFF*.



2. Press MENU –/+ to select *ON*.
To cancel the Auto Shutoff function, select ***OFF***.

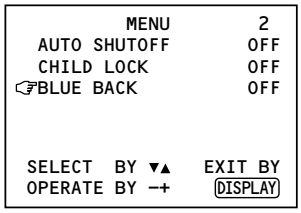
3. Press DISPLAY to turn the display off.

- The Auto Shutoff function does not turn off the TV's main power.
- The Auto Shutoff function will not work for a VIDEO mode.

Blue Back

You can mute the sound and change the picture into a blue screen while no signals are received by the TV, or when the signals are unstable.

1. Press MENU ▲/▼ to display the *MENU 2* menu, then select *BLUE BACK*.



2. Press MENU –/+ to select *ON*.
To cancel the Blue Back function, select ***OFF***.

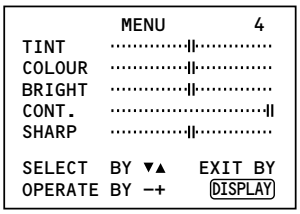
- To view a broadcast even when the reception signal is poor, set the Blue Back function to ***OFF***.
- Even when the Blue Back function is set to ***OFF***, the sound may not be audible.

3. Press DISPLAY to turn the display off.

Picture Adjustment

You can adjust the picture as you like.

1. Press MENU ▲/▼ repeatedly to display the *MENU 4*.



2. Press MENU ▲/▼ to select an item and press MENU –/+ to adjust it.

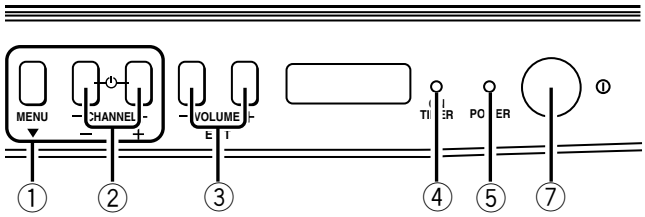
–	Item	+
Reddish	TINT	Greenish
Lighter	COLOUR	Deeper
Darker	BRIGHT	Brighter
Lower	CONT.	Higher
Softer	SHARP	Sharper

- ***TINT*** (tint) is displayed only when viewing images from NTSC3.58 or NTSC4.43 colour systems.

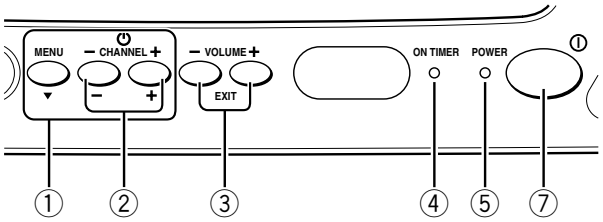
3. Press DISPLAY to turn the display off.

Using the button on the TV

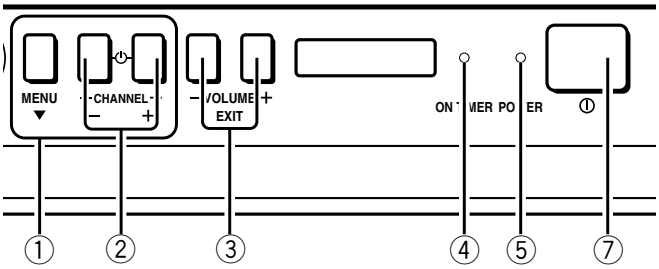
<AV-21D10/AV-21DM10/AV-21DTG2/AV-21LT1/AV-21LTG1>



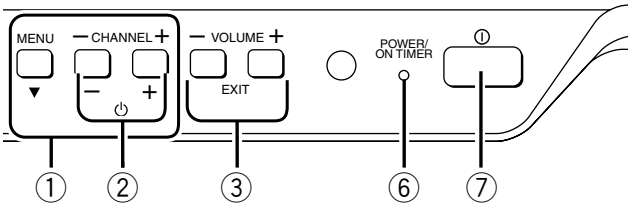
<AV-21ATG2>



<AV-14FTG2/AV-20NTG2>



<AV-14A10/AV-14ATG2>



① MENU buttons
- MENU ▼ button
- MENU –/+ buttons

② CHANNEL –/+ buttons
③ VOLUME –/+ buttons
④ ON TIMER lamp
The light is switched on while On Timer function is operating.
⑤ POWER lamp
When the Main power is on, the light is red.
⑥ POWER/ON TIMER lamp
When the Main power is on, the light is green.
When On Timer function is on, it is red.
⑦ Main power button

Basic operation

• Check to make sure the Child Lock function is set to ***OFF***. When the Child Lock function is set to ***ON***, the TV cannot be operated using the front control buttons. For details, see "Child Lock" on page 14.

1. **Press CHANNEL –/+ to turn the TV on from standby mode.**

2. **Press CHANNEL –/+ to select a channel.**

3. **Press VOLUME –/+ to adjust the volume.**

4. **To turn your TV off, press the Main power button to turn off the TV's main power.**

Operating menus

You can operate functions in menus using the front control buttons on the TV.

1. **Press MENU ▼ to display a menu.**

2. **Press MENU ▼ repeatedly to display the menu you want to use.**

3. **Press MENU ▼ to select the desired function or item.**

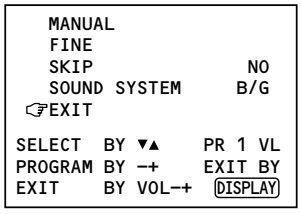
4. **Press MENU –/+ or VOLUME –/+ to carry out the desired operation.**

• For details, see the description for each function.

5. **Press VOLUME –/+ to turn the menu display off.**

To turn the sub-menu display off:

1. Press MENU ▼ to select *EXIT*.



2. Press VOLUME –/+ to turn the display off.

Troubleshooting

Important: Review all the instructions in this manual.

Problem	Check/Action
Cannot turn TV on	Press the Main power button (see p.5). Insert the power plug in an AC outlet.
No picture nor sound	Press the TV/VIDEO button to select the correct mode (see p.9). Check the aerial connections.
Remote control inoperable	Replace the batteries (see p.5). Insert the batteries correctly.
Buttons on front of TV do not work	Is the Child Lock function ***ON*** ? (see p.14).
The TV turns on suddenly	The TV will automatically turn on when the On Timer is operated (see p.13).
The TV turns off suddenly	The TV will automatically turn off in the following cases. • When the Off Timer or Auto Shutoff is operated (see p.11 and p.14). • When no operations are made within approximately two hours after the TV was turned on with the On Timer (see p.13).
Abnormal sound	Select the appropriate sound system (see p.10).
Abnormal colour	Adjust the colour and brightness (see p.15). Select the appropriate colour system (see p.10). Set the Picture mode to ***STANDARD*** (see p.10).
Lines or streaks in picture (interference)	Move the components apart until the interference disappears. Reposition the aerial.
Spotted picture (crosstalk)	Move the aerial away from the source of interference. Replace the aerial cable with a coaxial cable, which is less prone to interference.
Double picture (ghost)	Reposition the aerial. Replace with an aerial with good directionality.
Snowy picture (image noise)	Check the aerial connection and aim it correctly. Replace or repair the aerial.
The TV channel changes suddenly	The channel will automatically be changed when the On Timer operates (see p.13).
The screen turns blue	Is the Blue Back set to ***ON*** ? (see p.15).

The following are normal occurrences and are not the result of TV malfunctions:

- When a still bright image (of a white dress, for example) appears on the screen, the image may be coloured. This problem occurs in all CRTs, and when the bright image disappears, the colouration also disappears.
- This TV is equipped with a microcomputer that may operate abnormally due to interference from external devices. If this happens, press the Main power button to turn the main power off and disconnect the power plug from the AC outlet. Then, reconnect the power plug to the AC outlet and press the Main power button again.

Specifications

TV RF systems	AV-21DM10: B, G, I, D, K, K1, M Others models: B, G, I, D, K, K1
Colour systems	AV-21DM10: PAL, SECAM, NTSC3.58/4.43MHz Others models: PAL, SECAM, NTSC3.58/4.43MHz (in VIDEO mode only)
Channel and frequencies	VHF low channel (VL) = 46.25 to 168.25 MHz VHF high channel (VH) = 175.25 to 463.25 MHz UHF channel (U) = 471.25 to 863.25 MHz ■ Receives cable channels in mid band (X to Z, S1 to S10), super band (S11 to S20) and hyper band (S21 to S41) .
External input / output	VIDEO input (RCA) AUDIO input (RCA)
	VIDEO output (RCA) AUDIO output (RCA)
	Headphone jack: mini jack (dia. 3.5 mm)

Design and specifications subject to change without notice.

Broadcasting Systems

Area	Country or Region	System	
		Colour	Sound
Asia, Middle East	Bahrain, Kuwait, Oman, Qatar, United Arab Emirates, Yemen, etc. Indonesia, Malaysia, Singapore, Thailand, India, etc.	PAL	B/G
	China, Vietnam, etc.	PAL	D/K
	Hong Kong, etc.	PAL	I
	Islamic Republic of Iran, Lebanon, Saudi Arabia, etc.	SECAM	B/G
	Philippines, Taiwan, Myanmar, etc.	NTSC	M
Europe	Russia, etc.	SECAM	D/K
	Czech Republic, Poland, etc.	PAL	D/K
	Germany, Holland, Belgium, etc.	PAL	B/G
	UK, etc.	PAL	I
Oceania	Australia, New Zealand, etc.	PAL	B/G
Africa	Republic of South Africa, etc.	PAL	I
	Nigeria, etc.	PAL	B/G
	Egypt, Morocco, etc.	SECAM	B/G